



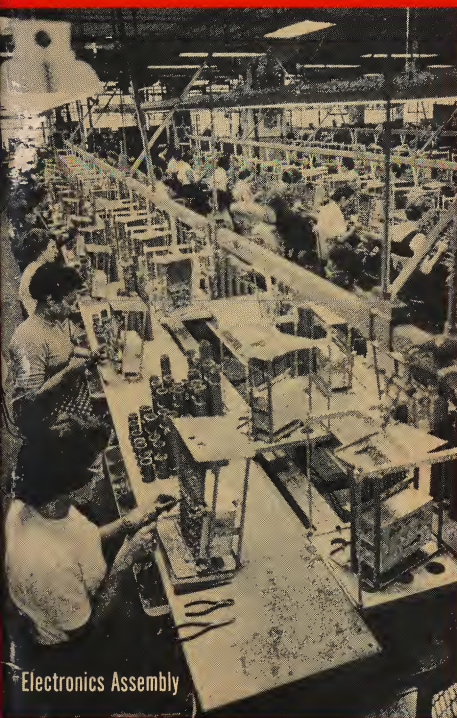
Watch Assembly



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Precision Manufacturing

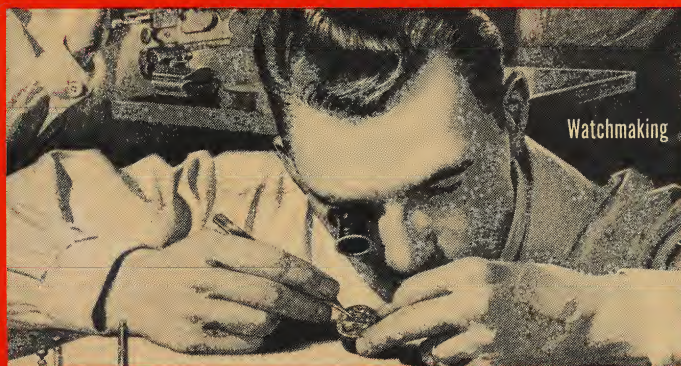


Electronics Assembly

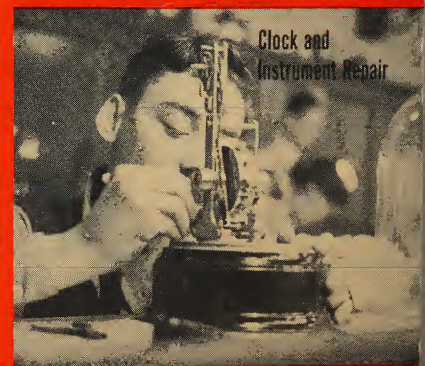
TOOL AND SUPPLY CATALOG NO. 665



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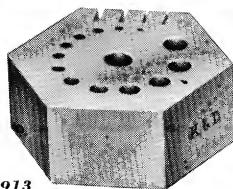
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ANVILS, BELTING AND BENCH PINS

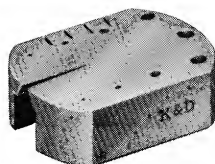


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Stock No.
5120-618-4913

K&D ANVIL

For staking, riveting and drilling. Case hardened by cyaniding and ground flat and smooth. Has 16 holes, graduated from $\frac{1}{32}$ " to $\frac{3}{16}$ ", and 5 milled slots.

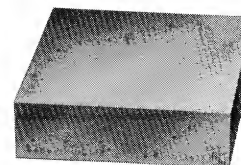
No.	Dimensions	Price
10-085	17 $\frac{1}{8}$ " x 3 $\frac{1}{4}$ "	\$3.85



K&D "V" SLOT ANVIL

For staking, riveting and drilling with "V" slot for removing pinions and similar objects. Hardened by cyaniding it has 9 graduated holes and 4 milled slots.

No.	Dimensions	Price
10-086	13 $\frac{1}{4}$ " x 1 $\frac{1}{2}$ " x $\frac{1}{2}$ "	\$3.85



BENCH BLOCK

Used for flattening objects and laying out work that needs a large area. Hardened by cyaniding and machine ground to a smooth mirror finish.

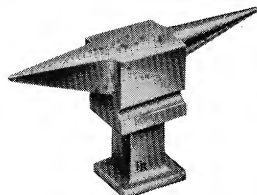
No.	Dimensions	Price
10-088	2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{3}{4}$ "	\$4.80



HORN ANVIL

For flattening and shaping, with hole for riveting. Round and flat (4-sided) polished steel horns.

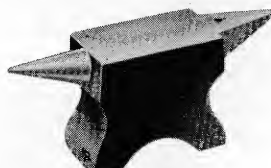
No.	Dimensions	Price
10-101	3 $\frac{7}{8}$ " x 2 $\frac{5}{8}$ "	\$5.00



HORN ANVIL

For flattening and shaping... light-weight fits in bench vise. Round and flat (4-sided) horns.

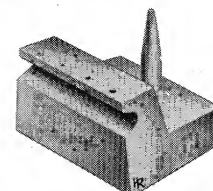
No.	Dimensions	Price
10-103	3 $\frac{3}{8}$ " x 1 $\frac{3}{4}$ "	\$3.90



HORN ANVIL

For flattening and shaping, with hole for riveting. Round and flat (4-sided) polished steel horns.

No.	Dimensions	Price
10-106	4 $\frac{1}{8}$ " x 1 $\frac{1}{4}$ "	\$7.20



OPTICIANS ANVIL

For staking, adjusting and peening optical screws and for riveting. Has 4 graduated holes and stake.

No.	Dimensions	Price
10-120	2" x 1 $\frac{1}{8}$ "	\$1.80

BELTING

For connecting small pulleys on miniature lathes, drill presses, etc.



SPIRAL SPRING

Furnished in 3-foot lengths complete with coupling. Strong, runs smooth and noiselessly.

No.	Diameter	Each
11-130	$\frac{3}{32}$ "	\$0.60



SOLID LEATHER

No.	Diameter	Per Ft.
11-145	$\frac{1}{8}$ "	\$0.30



CHROME LEATHER

No.	Diameter	Per Ft.
11-155	$\frac{1}{8}$ "	\$0.50
11-156	$\frac{5}{32}$ "	.50
11-157	$\frac{3}{16}$ "	.50



PLASTIC FUSIBLE

Ends fuse when heated to form endless belt. Will not crack... unaffected by oil.

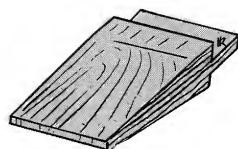
No.	Diameter	Per Ft.
11-174	$\frac{3}{32}$ "	\$0.15
11-175	$\frac{1}{8}$ "	.15
11-176	$\frac{5}{32}$ "	.15
11-177	$\frac{3}{16}$ "	.25
11-178	$\frac{7}{32}$ "	.25
11-179	$\frac{1}{4}$ "	.30



BELT HOOKS

For fastening leather belting. Threaded male and female supplied in each set.

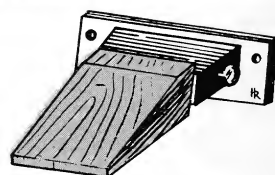
No.	Belt Dia.	Set
11-114	$\frac{1}{4}$ "	\$0.70
11-116	$\frac{3}{32}$ "	.70
11-118	$\frac{1}{8}$ "	.70
11-119	$\frac{5}{32}$ "	.70
11-120	$\frac{3}{16}$ "	.70



WOOD BENCH PIN

Flat and tapered surfaces for sawing, filing, etc.... Made of hardwood, it fits in work bench slots.

No.	Dimensions	Price
11-250	5 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ "	\$0.30
11-251	6 $\frac{1}{4}$ " x 2 $\frac{1}{2}$ "	.35
11-252	7" x 3"	.40



BENCH PIN IN METAL HOLDER

Iron holder can easily be screwed to work bench. Holder has thumb screw for locking-in bench pin, measures 4 $\frac{1}{2}$ " wide and uses No. 11-250 bench pin.

No.	Description	Price
11-275	Holder and Pin	\$1.90

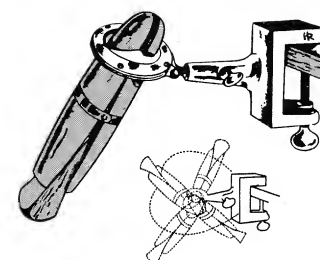
BENCH PIN FOR HOLDING RINGS

Groove holds rings of any size and shape with slot channel for saw blade... hold ring as shown. Also useful when working on settings of stone set rings. Can be secured to bench.

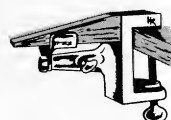
No.	Dimensions	Price
11-264	5 $\frac{1}{2}$ " x $\frac{1}{2}$ " x $\frac{3}{8}$ "	\$0.95

COMBINATION RING CLAMP AND BENCH PIN

Turn it! Twist it!
Choose any position you want!



Here is a ring clamp that doesn't have to be jammed tightly against the bench or bench pin causing fatigue and strain on the hand, wrists, and arm. A gentle, but firm grip is all that is necessary to hold it in the correct working position even at awkward angles. You'll turn out much finer work in a shorter period of time. To inspect, polish, measure or compare your work just loosen the smaller thumb screw and slide the ring clamp from its socket.

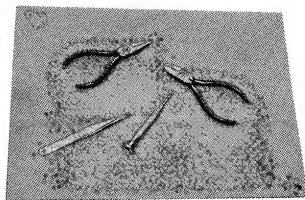


A DUAL PURPOSE TOOL

The sturdy bench pin attachment on the left is also a part of the set. It too has the special sliding rod that insures quick, easy installation and removal.

No.	Description	Price
11-283	Complete Set	\$12.95
11-253	Replacement Bench Pin	.35

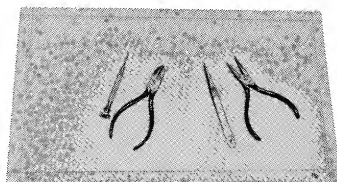
PRICES SUBJECT TO CHANGE WITHOUT NOTICE



VINYL PLASTIC BENCH PLATE

Work area of eye-ease green that is non-inflammable, resists oil, grease and most acids. Parts and tools will not bounce or roll off, rubberized base prevents slipping.

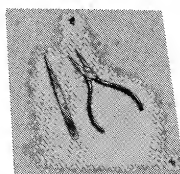
No.	Dimensions	Price
11-293	14" x 9 7/8"	\$2.00



MASONITE BENCH PLATE

Work area with baked white enamel finish that will not break, chip or peel. Edge is grooved so parts will not roll off.

No.	Dimensions	Price
11-290	16" x 9"	\$1.95



GLASS BENCH PLATE

Work area of white vitrified glass whose base is scored to prevent slipping. Hard working surface, unaffected by solutions.

No.	Dimensions	Price
11-294	10" x 10"	\$3.95
11-296	12" x 12"	4.95



HAND BLOWER

Large capacity tough plastic air reservoir and foolproof action make this the most efficient blower available. Plastic washer treated to prevent drying out. Ridges on body prevent blower from falling off the bench.

No.	O. L.	Price
11-304	4 1/2"	\$1.50

FEOLA HAND BLOWER

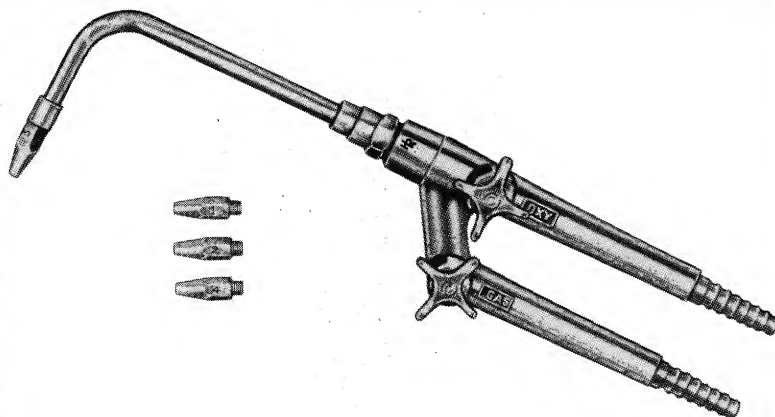
Strong air stream for removing dust and dirt. Made of plastic and will stand on end when not in use. Has plastic washer treated to prevent drying out.

No.	O. L.	Price
11-301A	4 1/4"	\$1.00

RUBBER BLOWER

An economical hand blower for removing dust and dirt. All rubber construction provides sure, foolproof operation.

No.	O. L.	Price
11-305	4 1/4"	\$1.20



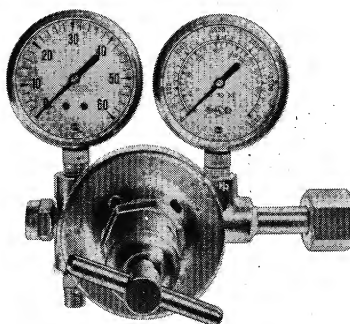
HR SUPERIOR JEWELER'S TORCH

For brazing, welding, soldering, annealing and sealing. Finger tip control of gas and air systems along with special tips allows the user to select the type of flame he needs, ranging from a very hot brush flame to a fine needle flame that is hot enough to weld platinum.

All parts are machined from solid brass stock and seamless drawn brass tubing and are completely nickel plated. Overall length is 9". Inlets use the standard 1/4" tubing.

No.	Gas System	Pilot Light	Tips	Price
11-401	Oxygen and Artificial	Yes	4	\$14.95
11-403	Oxygen and Hydrogen	No	4	14.95
11-404	Oxygen and Acetylene	No	4	14.95
11-405	Air and Artificial	Yes**	1	14.95
11-406	Oxygen and Natural Gas	No*	3	14.95
11-407	Oxygen and Butane	No	4	14.95

*Natural Gas and other slow burning fuel gas.
**With by-pass pilot light.



REGULATOR FOR OXYGEN TANKS

Reduces high tank pressure and regulates it for constant, steady working pressure as high or low as desired. Made from solid brass stock with 3" diaphragm and easy reading dial gauges.

No.	Description	Price
11-410	Oxygen 3" diaphragm	\$46.50

COMPLETE PORTABLE OUTFIT

For the repair bench or the one man shop.

- Choose any HR Superior Oxygen Torch listed above.
- Regulator No. 11-410.
- Pair of nine foot hose length with brass fittings.
- Supporting hook to hold torch.
- Special wrench.
- Goggles for welding platinum.
- Complete instruction sheet.

No.	Description	Price
11-408	Complete Outfit	\$73.95

Specify torch number as well as order number when ordering.

COMPLETE OUTFIT FOR PERMANENT INSTALLATIONS

Where oxygen is piped directly to the bench.

- Choose any HR Superior Oxygen Torch listed above.
- Regulator No. 11-410.
- Four foot hose with fittings to connect the regulator and pipe line.
- Supporting hook to hold torch.
- Special wrench.
- Goggles for welding platinum.
- Jar of litharge and glycerine.
- Complete instruction sheet.

No.	Description	Price
11-409	Complete Outfit	\$73.95

Specify torch number as well as order number when ordering.

BLOWPIPES AND BURNERS



PLAIN BRASS BLOWPIPE

Economically priced one piece brass tube blowpipe for mouth operation.

No.	O. L.	Price
11-308	8"	\$0.40
11-310	10"	.45
11-312	12"	.50



BRASS BLOWPIPE WITH BALL

Ball reservoir provides a more even flow of air pressure and assures better workmanship. For mouth operation.

No.	O. L.	Price
11-318	8"	\$0.75
11-320	10"	.85
11-322	12"	1.00



HOT BLAST BLOWPIPE

Intense heat can be obtained when cotton wick in special tube is saturated with benzine or gasoline. For mouth operation. Made of brass tubing that has been nickel plated.

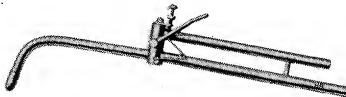
No.	O. L.	Price
11-362	11"	\$3.25



COMBINATION BLOWPIPE

Can be used with either high power air pressure system or mouth piece. Made of heavy brass tubing with a gas tube that takes the standard 1/4" tubing.

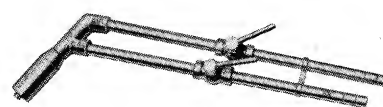
No.	O. L.	Gas System	Price
11-386	9"	Artificial	\$1.30



MELLOTTÉ'S BLOWPIPE

Thumb lever selects type of flame, large brush to pin-point, with set screw for permanent setting. Uses 5/16" tubing... nickel plated.

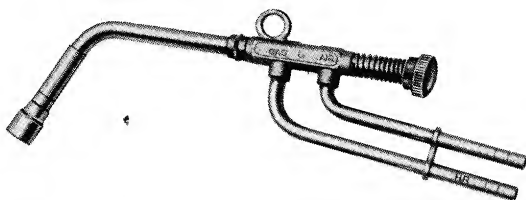
No.	O. L.	Gas System	Price
11-384	12"	Artificial	\$6.75
11-385	12"	Natural	6.75



SOLDERING BLOWPIPE

Two stop cocks for fingertip adjustment of flame. Completely nickel plated, its gas and air inlets use 3/8" tubing.

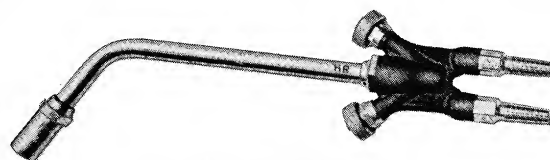
No.	O. L.	Gas System	Price
11-375A	12 1/2"	Natural	\$8.00



AUTOMATIC BLOWPIPE

A handy regulating nut, controlled by the forefinger, permits a wide selection of flame sizes ranging from a fine needle point flame to a very hot brush flame. Operated with one hand, pistol grip fashion, flame selections are quick and easy. Completely nickel plated, its gas and air inlets use 1/4" tubing.

No.	O. L.	Gas System	Price
11-375	9 1/2"	Natural	\$8.30



HI-HEAT BLOWPIPE

For use with either air or oxygen and gas (artificial, natural, mixed, propane, butane, acetylene, etc.). Tubes and fittings are nickel plated and inlets use 1/4" or 5/16" tubing.

No.	O. L.	Tip	Price
11-391	10 1/4"	Small air and gas tip	\$9.50
11-392	10 1/4"	Small and large air and gas tips	11.50

ACCESSORY

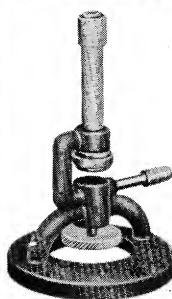
No.	Description	Price
11-393	Oxygen and Gas Tip	\$2.00



BUNSEN BURNER

For use with artificial or natural gas. Its brass tube has a rotating sleeve for air adjustment to provide various flame characteristics. Approximate height 5 5/8", base diameter 3". Uses 1/4" tubing.

No.	Gas System	Price
30-326	Artificial or Natural	\$1.60



HI-HEAT BUNSEN BURNERS

Has needle valve gas control combined with an air control adjustment for very hot brush flame or needle flame with intense heat. Height 4 1/2", base diameter 3". Uses 1/4" tubing.

No.	Gas System	Price
30-327	Artificial	\$3.00
30-328	Natural	3.00



RUBBER TUBING

For connecting bellows, blowpipes and bunsen burners. Made of a high quality rubber.

No.	Inside Dia.	Per Ft.
11-341	1/4"	\$0.20
11-342	5/16"	.20
11-343	3/8"	.20



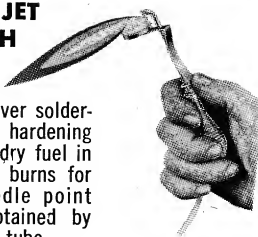
ROTARY COMPRESSOR

Provides even air pressure while operating blowpipes and small melting furnaces. Air pressure produced depends upon speed of motor and proper lubrication of the compressor. For use with 1/8 hp motors or greater. Weight approx. 3 1/4 lbs.

No.	PSI Pressure	Price
11-241	3 lbs. at 1500 RPM 5 1/2 lbs. at 3000 RPM	\$25.75

SUPER JET TORCH

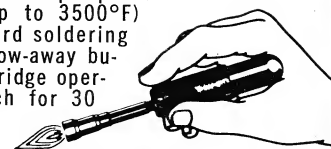
Hot enough for silver soldering, annealing or hardening small parts. Uses dry fuel in tablet form which burns for 10 minutes. Needle point flame can be obtained by blowing in mouth tube.



No.	Description	Price
30-478	Torch and 12 tablets	\$1.85
30-479	Tube of 12 tablets	.35

JET KING BLOW TORCH

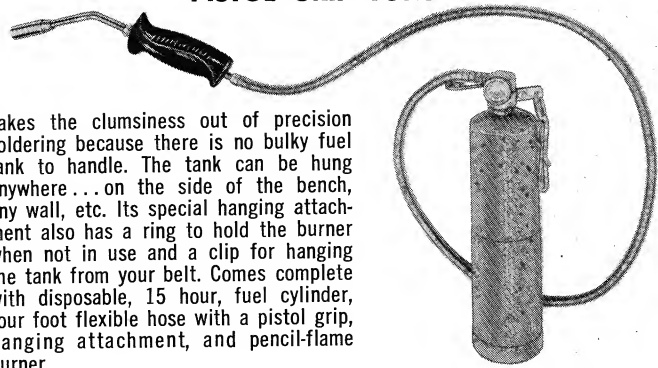
Intensely hot pin-point flame (up to 3500°F) makes hard soldering easy. Throw-away butane cartridge operates torch for 30 minutes.



No.	Description	Price
30-472	Torch and Fuel Cartridge	\$2.50
30-473	Fuel Cartridges only	.55
30-474	Torch, Fuel Cartridge, Soldering Iron Tip & Solder	4.45

BLOWPIPES AND BURNERS

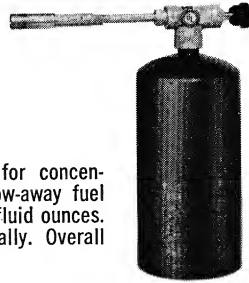
PISTOL GRIP TORCH



Takes the clumsiness out of precision soldering because there is no bulky fuel tank to handle. The tank can be hung anywhere... on the side of the bench, any wall, etc. Its special hanging attachment also has a ring to hold the burner when not in use and a clip for hanging the tank from your belt. Comes complete with disposable, 15 hour, fuel cylinder, four foot flexible hose with a pistol grip, hanging attachment, and pencil-flame burner.

BANTAM TORCH

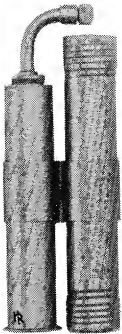
Propane Gas torch with pin-point burner for concentrated heat during precision soldering. Throw-away fuel cylinder lasts up to 15 hours, capacity 11.3 fluid ounces. No pumping, no priming, burns automatically. Overall height, including burner, 6½".



No.	Description	Price
30-510	Burner and Fuel	\$6.95
30-511	Fuel only	1.75

No.	Description	Price
30-512	Burner, Hose and Fuel	\$14.30
30-513	Fuel only	1.95

ALCOHOL TORCH



Uses denatured or commercial alcohol or special fuel. Starts in 10 seconds without priming or pumping. Produces intense heat. Overall height 5½".

No.	Description	Price
30-408	Torch only	\$3.75
30-409	Fuel, 16 oz.	1.00

BUTANE TORCH



Has pencil flame burner for precision soldering, etc. Throw-away fuel cylinder, capacity 400 grams. Overall height, including burner 13½".

No.	Description	Price
30-429	Burner and Fuel	\$3.79
30-430	Fuel only	1.39



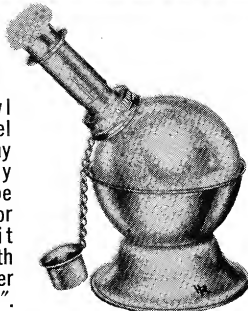
AER-O-TORCH

LP Gas torch with pinpoint burner for precision soldering, etc. Generates enough heat to melt silver solder. Throw-away fuel cylinder has capacity 262 grams. Overall height, including burner 10½".

No.	Description	Price
30-482	Burner and Fuel	\$3.30
30-486	Fuel only	1.19

SPHERICAL BURNER

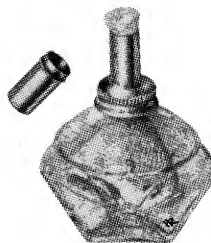
Round glass bowl rests in non-tip nickel plated base. Bowl may be tipped to any angle. Wick can be adjusted by raising or lowering its split sleeve. Equipped with safety cap. Diameter of bowl 3", wick ¾".



No.	Capacity	Price
30-016	5 oz.	\$2.50

SIMPLICITY BURNER

Faceted bowl permits burner to be tipped on an angle. Wick can be adjusted by raising or lowering its split sleeve. Equipped with safety cap. Diameter of bowl 3¾", wick ¾".



No.	Wick Dia.	Capacity	Price
30-010	½"	4 oz.	\$1.40
30-011	¾"	4 oz.	1.40

SIMPLICITY BURNER WITH SCREW ADJUSTMENT

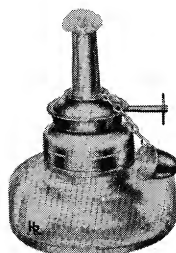
Faceted bowl permits burner to be tipped on an angle. Wick has screw adjustment and safety cap that also prevents evaporation of fuel. Diameter of bowl 3¾", wick ¾".



No.	Capacity	Price
30-020	4 oz.	\$1.95

DENTAL BURNER

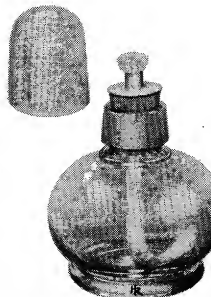
Made of heavy glass. Wick has screw adjustment and safety cap that also prevents evaporation of fuel. Diameter of bowl is 2½", wick ¾".



No.	Capacity	Price
30-001	1½ oz.	\$1.85
30-002	3½ oz.	1.85

GLASS TOP BURNER

A part of the glass cover and the neck of the lamp have been ground to provide an air-tight fit that prevents evaporation of the fuel. Diameter of the bowl 2⅞", wick ¾".



No.	Capacity	Price
30-007	2 oz.	\$1.60

RANDALL'S LAMP

For precision work where a small flame is needed. This short lamp is of all metal construction that has been nickel plated and has a safety, screw-on cap.



No.	Height	Price
30-003	2"	\$2.00

BOTTLES, BOXES AND CONTAINERS

No. 11-652

No. 11-656



ACID BOTTLES

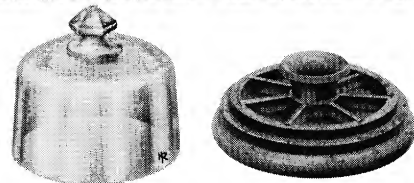
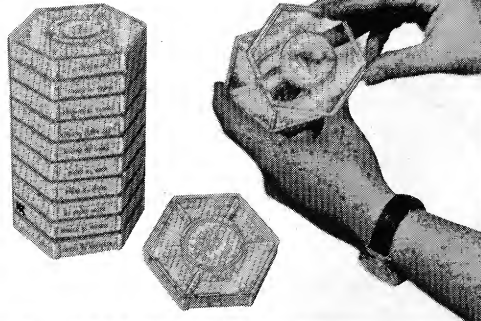
Safe containers for acid, made of clear glass. Ground glass stoppers prevent evaporation and are used to apply acid.

No.	Style	Contents	Price
11-652	Round	1½ oz.	\$2.10
11-656	Square	½ oz.	1.30

MAGNI-TRAY UNLIMITED STACKING

Magnifying cover and tray to hold and protect, from dust, unassembled watch movements and parts. Trays have a non-glare white base that is unaffected by solutions, a slot for holding an identification tag, six small parts sections around a center compartment that holds the movement, and a clear plastic cover with a multi-purpose magnifying center. The tray and cover are especially designed to stack one on top of the other for easy storage, an uncluttered work bench and safe keeping.

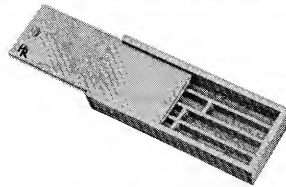
No.	Diameter	Each
18-379	4"	\$0.69



MOVEMENT COVER AND TRAY

Keeps unassembled movements in order and protects them from dust.

No.	Dia.	Style	Price
18-372	4"	Wood and Glass	\$3.50
18-374	3½"	All Plastic	2.50



BROACH BOX

Sturdy wooden box with slide cover, divided into 7 compartments, for storing broaches.

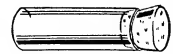
No.	Dimensions	Price
11-752	7¼"x3"x¼"	\$2.25

BOTTLES

For storage of watch material and other small parts.

GLASS WITH CORK TOP

Size of cork not included in dimensions.



No.	Dimensions	Dozen
11-602	6½mm x 23mm	\$0.50
11-603	8mm x 24mm	.50
11-608	15mm x 41mm	.50
11-611	11½mm x 31mm	.50

GLASS WITH SCREW TOP

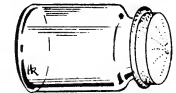
Size of top included in the dimensions.



No.	Dimensions	Dozen
11-624	18mm x 30mm	\$1.40
11-625	19mm x 35mm	1.40
11-626	23mm x 40mm	1.40
11-627	16mm x 48mm	1.40
11-629	14mm x 45mm	1.40

GLASS WITH PLASTIC TOP

Size of top included in dimensions.



No.	Dimensions	Dozen
11-636	23mm x 32mm	\$0.90

ROUND METAL MATERIAL BOXES

Round boxes for storing and shipping material, parts, etc.



No.	Dia.	Height	Dozen
TIN			
11-700	23mm	10mm	\$0.35
11-701	30mm	7½mm	.40
11-702	30mm	10mm	.40
11-703	31mm	12½mm	.45
11-704	39mm	14mm	.50
11-705	49mm	15mm	.60
11-706	46mm	17½mm	.60
11-707	57mm	21mm	.95
ALUMINUM			
11-713	16½mm	7.4mm	.40

PLASTIC MATERIAL BOXES

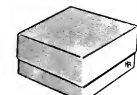
See-through boxes for storing watch material parts, etc.



No.	Dimensions	Dozen
11-714	1" x 1" x ¾"	\$0.60
11-715	1" x 2" x ¾"	.72
11-716	2" x 2" x ¾"	.84

PAPER MATERIAL BOXES

Easy to mark information on top of these boxes.



No.	Dimensions	Dozen
11-721	1" x 1" x ¾"	\$1.00
11-722	1¾" x 1¾" x ¾"	1.00
11-723	1¾" x 1¾" x ¾"	1.00
11-724	1¾" x 1" x ¾"	1.00

LEATHERETTE CABINETS

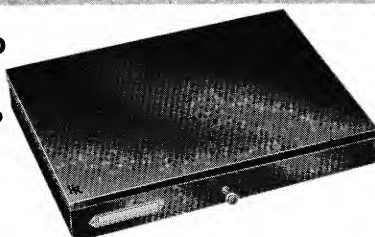
For storing many types of small parts. Supplied with or without bottles.



No.	No.	Bottles	Size	Without	With
SMALL BOTTLE (No. 11-602)					
11-781	12	6½ x 23mm		\$1.75	\$2.15
11-783	24	6½ x 23mm		2.25	3.05
11-787	48	6½ x 23mm		3.35	4.95
LARGE BOTTLE (No. 11-611)					
11-782	12	11½ x 31mm		1.75	2.15
11-784	24	11½ x 31mm		2.25	3.05
11-790	72	11½ x 31mm		4.50	6.90

Specify with or without bottles when ordering.

STANDARD STEEL STACK UP CABINETS



Permits addition of drawers merely by removing top, adding drawers and sides and replacing top. Not necessary to purchase additional tops and bottoms, will stack with other standard makes. Stacking surface 13½" wide, 10½" deep.

Two sizes of drawers available. One is the deep or mainspring type which is divided by partitions to hold rows of material envelopes measuring 1¾" wide, 2¾" high. The other is the shallow or material type into which special inserts can be supplied to hold 72 No. 11-636 bottles; or 144 No. 11-611 bottles or 217 No. 11-602 bottles, or can be used without inserts to hold paper or plastic material boxes.

CABINETS

No.	Description	Price
MATERIAL		
11-771	1-Drawer, Complete	\$11.00
11-772	2-Drawer, Complete	15.00
11-773	1-Drawer, no top or bottom	6.00
11-774	2-Drawer, no top or bottom	10.00
MAINSPRINGS		
11-775	1-Drawer, Complete	16.00
11-777	1-Drawer, no top or bottom	11.00

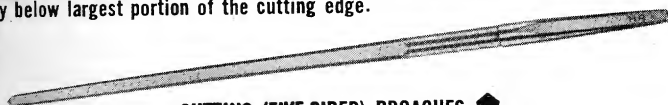
ACCESSORIES

No.	Description	Price
CABINET PARTS		
11-779	Top only for either cabinet	\$2.50
11-780	Bottom only for either cabinet	2.50
WOOD INSERTS FOR BOTTLES		
—	For 72 Bottles	2.50
—	For 144 Bottles	2.50
—	For 217 Bottles	2.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

ENGLISH PATTERN BROACHES

Cutting, cleaning and finishing broaches made of a high quality steel uniformly tempered for long life. The lengths vary from over 7" to approximately 1 3/4" with diameters gauged slightly below largest portion of the cutting edge.



CUTTING (FIVE-SIDED) BROACHES

No.	Stubs	Inch	Each	No.	Stubs	Inch	Each	No.	Stubs	Inch	Each
12-000F	F	.257"	\$1.50	12-030	30	.127"	\$0.55	12-055	55	.050"	\$0.25
12-000G	C	.242"	1.40	12-032	32	.115"	.55	12-058	58	.041"	.25
12-000A	A	.234"	1.40	12-034	34	.110"	.55	12-060	60	.039"	.20
12-001	1	.227"	1.25	12-035	35	.108"	.45	12-062	62	.037"	.20
12-005	5	.204"	1.00	12-038	38	.101"	.45	12-064	64	.035"	.20
12-010	10	.191"	.90	12-040	40	.097"	.40	12-065	65	.033"	.20
12-015	15	.178"	.80	12-042	42	.092"	.40	12-068	68	.030"	.20
12-018	18	.168"	.80	12-044	44	.085"	.40	12-070	70	.027"	.20
12-020	20	.161"	.70	12-045	45	.081"	.35	12-072	72	.024"	.20
12-022	22	.155"	.70	12-048	48	.075"	.35	12-075	75	.020"	.20
12-024	24	.151"	.70	12-050	50	.069"	.30	12-076	76	.018"	.20
12-025	25	.148"	.60	12-052	52	.063"	.30	12-078	78	.015"	.20
12-028	28	.139"	.60	12-054	54	.055"	.30	12-080	80	.013"	.20

ROUND (SMOOTHING) BROACHES

No.	Stubs	Inch	Each	No.	Stubs	Inch	Each	No.	Stubs	Inch	Each
12-115	15	.178"	\$0.80	12-140	40	.097"	\$0.40	12-165	65	.033"	\$0.20
12-120	20	.161"	.70	12-145	45	.081"	.35	12-170	70	.027"	.20
12-125	25	.148"	.60	12-150	50	.069"	.30	12-175	75	.020"	.20
12-130	30	.127"	.55	12-155	55	.050"	.25	12-180	80	.013"	.20
12-135	35	.108"	.45	12-160	60	.039"	.20	—	—	—	—



ASSORTMENTS OF BROACHES

Each assortment contains one dozen of the most used numbers for general purpose work packed in convenient tubes.

CUTTING

No.	Stubs	Inch	Set
12-202	15 to 70	.178" to .027"	\$4.35
12-203	30 to 70	.127" to .027"	3.50

ROUND

No.	Stubs	Inch	Set
12-200	15 to 70	.178" to .027"	\$4.35
12-201	30 to 70	.127" to .027"	3.50



BROACH ASSORTMENTS WITH BROACH HOLDERS

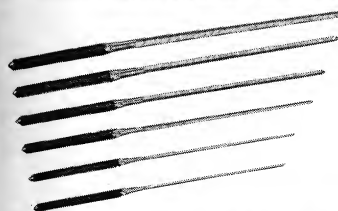
One dozen of the most used numbers packed in a metal tube with a broach holder.

CUTTING

No.	Stubs	Inch	Set
12-213	30 to 70	.127" to .027"	\$3.85
12-304	54 to 74	.055" to .022"	3.25

ROUND

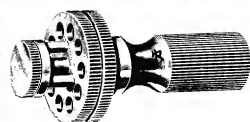
No.	Stubs	Inch	Set
12-211	30 to 70	.127" to .027"	\$3.85
12-307	54 to 74	.055" to .022"	3.25



CUTTING BROACHES WITH KNURLED HANDLES

Set of 6 assorted sizes mounted on pad. Knurled steel handles measure approx. 1 1/2" long.

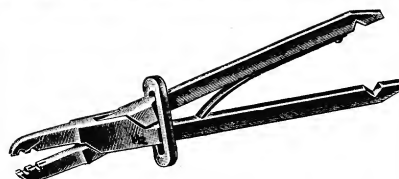
No.	Sizes	Set
12-300	Stubs: 43 to 72 Inch: .088" to .024"	\$1.95



BROACHING DEVICES

Screw locking device securely holds miniature parts such as watch hands while being broached. Well graduated hole sizes. No. 12-910 has small holes.

No.	Dimensions	Holes	Price
12-901	1 5/8" x 1 1/4"	10	\$3.25
12-910	1 1/2" x 3/4"	6	3.00



HAND TONGS OR PLIERS

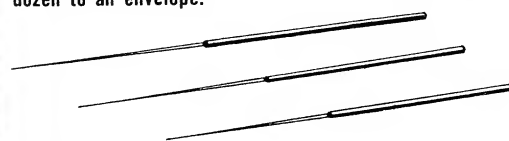
For holding small parts such as watch hands, etc., while broaching.

No.	O. L.	Holes	Price
37-401	4 3/4"	2	\$3.95



JOINT & PIVOT BROACHES

Superior quality broaches at an economical price. Perfectly tapered, true to size, carefully finished. All have round handles, an overall length of 1 3/4", and are packaged one dozen to an envelope.



PIVOT BROACHES

No.	Diameters		Price Doz.
	Point	Largest	
Cutting (Five-sided) Broaches			◆
12-412	.003"	.013"	\$1.70
12-410	.005"	.015"	1.60
12-411	.008"	.018"	1.60
Smoothing (Round)			●
12-414	.003"	.013"	1.70
12-415	.005"	.015"	1.60

JOINT BROACHES (Cutting)

No.	Stubs	Inch	Price Doz.
12-356	56	.045"	\$1.80
12-360	60	.039"	
12-364	64	.035"	
12-368	68	.030"	
12-372	72	.024"	
12-376	76	.018"	

ASSORTMENTS

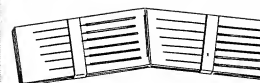
No.	Description	Set
12-413	Assorted Joint Broaches	\$1.80



ASSORTMENT CUTTING PIVOT BROACHES

One dozen assorted sizes in aluminum tube. Made of good quality steel and finished to assure long life. Measurements taken at large part of cutting edge.

No.	Sizes	Set
12-610	.005" to .012"	\$1.10
12-611	.014" to .018"	1.05



CUTTING BROACHES ON PAD

One dozen of the most used numbers on a cardboard pad.

No.	Stubs	Inch	Set
12-422P	54 to 74	.055" to .022"	\$2.50

BRUSHES

BORAX BRUSHES IN QUILL HANDLES

Made of fine camel's hair. Recommended for applying borax while soldering and when using liquid cements, lacquer, etc. A stick of pegwood can be used for a longer handle.

Illustrations are actual size.



No.	Length	Dozen
13-001	3 3/4"	\$2.50



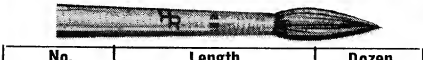
No.	Length	Dozen
13-002	3 5/8"	\$2.50



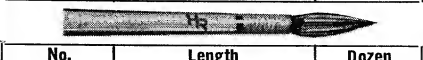
No.	Length	Dozen
13-003	3"	\$2.00



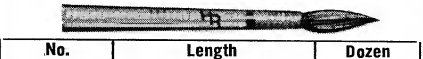
No.	Length	Dozen
13-004	3"	\$2.00



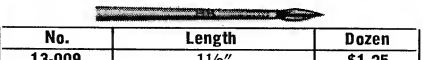
No.	Length	Dozen
13-005	2 1/4"	\$1.50



No.	Length	Dozen
13-006	1 7/8"	\$1.50



No.	Length	Dozen
13-007	1 5/8"	\$1.25



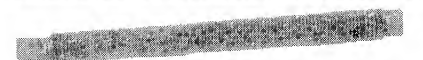
No.	Length	Dozen
13-009	1 1/2"	\$1.25



BRUSH IN ALUMINUM HANDLE

Economical brush for applying borax, lacquer, liquid cements, etc. A stick of pegwood can be used for a longer handle.

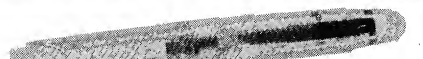
No.	Length	Dozen
13-090	1 1/4"	\$0.50



SPUN GLASS SCRATCH BRUSH

For removing rust and dirt from flat metal surfaces and hard-to-get-at crevices, and for polishing. Very fine pliable glass bristles bound in cord that unwinds as bristles wear.

No.	Dimensions	Price
13-019	7" x 1/2"	\$0.75
13-020	7" x 3/4"	1.00



FYBERGLASS BRUSH

For removing scratches, rust and grime as well as for polishing metal surfaces and crevices. Extra fine glass bristles are mounted in a transparent plastic case with a screw thread to feed bristles as needed.

No.	Description	Price
13-026	1 1/2" x 3/4" bristle	\$0.50
13-027	Set of 2 Refills	.25

No. 13-010



No. 13-011

LONG CLEANING BRUSHES

Good quality stiff bristles held securely on long twisted wire handles that provide extra reach.

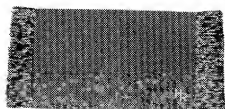
No.	Type	Length	Price
13-010	Single End	14"	\$0.20
13-011	Double End	13"	.30



PENDANT CLEANING BRUSH

Stiff tapered bristles, approximately 4" long, in twisted wire handle. For cleaning watch pendants and similar objects.

No.	Length	Price
13-031	6 1/2"	\$0.20



BRASS SCRATCH BRUSH

For removing rust and dirt from crevices. Small brass wire bristles are bound in a metal holder.

No.	Dimensions	Price
13-035	1 3/4" x 3/4"	\$0.40

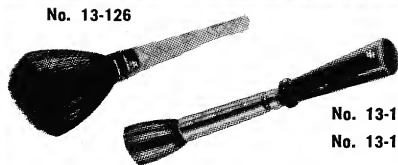


NYLON BRUSHES

Stiff nylon bristles for cleaning precious metals, etc., in sets of three diameters: 1/4" - 5/16" - 3/8". Approximate length 5 1/2", with color coded plastic handles.

No.	Description	Price
13-135	Set of 3	\$1.65

No. 13-126



No. 13-124

No. 13-125

DIAL DUSTING BRUSHES

Soft hair brushes for removing dust from dials and other delicate polished surfaces. Nos. 13-124 and 13-125 have wood handles. No. 13-126 has a quill handle.

No.	Length	Type	Price
13-124	4 1/4"	Goat hair	\$0.85
13-125	4 1/4"	Camel hair	1.00
13-126	4"	Goat hair	1.10



CLOCK PINION BRUSH

Four rows of stiff, tapered bristles on curved handle permits rapid and efficient cleaning of clock and instrument movements.

No.	O. L.	Bristle	Price
13-130	7 1/2"	2" x 1"	\$1.75



CLOCK BRUSHES

Large brushes with stiff black bristles, approx. 5" x 3/4", in wooden handles suitable for clock and instrument cleaning.

No.	O. L.	Bristle	Price
13-140	11"	4 rows	\$1.10
13-150	11"	5 rows	1.30
13-160	11"	6 rows	1.55



BENCH DUSTER

Soft black bristles, approx. 4" x 1 1/2", in a wooden handle suitable for sweeping-up filings of precious metals.

No.	O. L.	Bristle	Price
13-204	9 1/2"	4 rows	\$1.20

WASHOUT BRUSHES

Stiff black bristles for cleaning with solutions or when the object must be submerged in a cleaning fluid. Extra care has been taken to anchor the bristles firmly in the handles. Bristles are available in 3, 4, or 5 rows.



BONE HANDLE—Overall length 7" with Natural bristles 3" long and 1/2" deep.

No.	Rows	Price
13-230	3	\$1.75
13-240	4	2.00
13-250	5	2.70



LUCITE HANDLE—Overall length 7 1/2" with either Natural or Nylon bristles 3" long and 1/2" deep.

No.	Style	Rows	Price
13-238	Natural	3	\$1.75
13-243	Nylon	4	2.00
13-248	Natural	4	2.00
13-258	Natural	5	2.70



WOOD HANDLE—Overall length 8 1/4", with natural black bristles. 3 1/2" long and 3/4" deep.

No.	Rows	Price
13-241	4	\$1.70



BENT PLASTIC HANDLE—Overall length 6 3/4", with nylon bristles 1 3/4" long and 1/2" deep that fit inside most rings.

No.	Rows	Price
13-245	4	\$0.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

WATCH BRUSHES

With varying degrees of hardness necessary for properly cleaning and dusting surfaces of both small and large instruments.

- Hard for removing extra heavy grit.
- 1/2-Hard for general cleaning.
- 1/2-Soft for cleaning the more delicate parts.
- Soft for removing dust from surfaces that scratch easily.



GLASGOW BRUSHES

Wood handle brushes to clean all types of parts and assemblies. Overall length 10 1/4", with 4 rows of bristles (4 1/2" long, 5/8" deep). The white bristles are available in four degrees of hardness:

No.	Type	Price
3 ROWS OF BRISTLES		
13-331	Hard	\$0.85
13-332	1/2 Hard	.85
13-333	1/2 Soft	.85
13-334	Soft	.85
4 ROWS OF BRISTLES		
13-341	Hard	1.00
13-342	1/2 Hard	1.00
13-343	1/2 Soft	1.00
13-344	Soft	1.00
5 ROWS OF BRISTLES		
13-351	Hard	1.20
13-352	1/2 Hard	1.20
13-353	1/2 Soft	1.20
13-354	Soft	1.20



NYLON—4 Rows of washable white nylon bristles, approx. 4 3/4" x 5/8", in well seasoned wood handles. Approx. length 10 1/4".

No.	Type	Price
13-391	Hard	\$0.85
13-392	1/2 Hard	.85
13-393	1/2 Soft	.85
13-394	Soft	.85



BRACELET—4-Rows of uniform white bristles, approx. 3" x 5/8", in well seasoned wood handles. Approx. length 7 1/4".

No.	Type	Price
13-431	Hard	\$0.85
13-432	1/2 Hard	.85
13-433	1/2 Soft	.85
13-434	Soft	.85



FACTORY—4-Rows of uniform white bristles, approx. 1 3/4" x 5/8", in well seasoned wood handles. Approx. length 10".

No.	Type	Price
13-441	Hard	\$0.75
13-442	1/2 Hard	.75
13-443	1/2 Soft	.75
13-444	Soft	.75



EXTRA SOFT—4-Rows of natural hair bristles, approx. 3 3/4" x 5/8", in well seasoned wood handles. Approx. length 10 1/2".

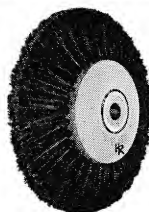
No.	Type	Price
13-346	Human Hair	\$1.60
13-347	Goat Hair	1.60



SCRATCH BRUSHES

For cleaning and producing special finishes on soft metals. 4-Rows of metal bristles, approx. 4 1/2" x 3/4", in well seasoned wood handles. Approx. length 10".

No.	Type	Price
13-460	Brass	\$1.65
13-462	Steel	1.65



BLACK BRISTLE WHEEL BRUSHES

For cleaning and polishing. Good quality wedge shaped black bristles mounted on hardwood blocks that are bored to fit a taper spindle. Nos. 13-634 1/2/641 1/2 have short bristles.

No.	Diameters		Each
	Overall	Block	
1 ROW OF BRISTLES			
13-634	2½"	1¼"	\$0.50
13-634½	2"	1¼"	.50
13-635	3"	1½"	.65
2 ROWS OF BLACK BRISTLES			
13-640	2¼"	1"	.60
13-641	2½"	1¼"	.70
13-641½	2"	1¼"	.70
13-642	3"	1½"	.90
3 ROWS OF BLACK BRISTLES			
13-649	2½"	1¼"	1.05
13-650	3"	1½"	1.30
13-651	3½"	2"	1.60
4 ROWS OF BLACK BRISTLES			
13-655	2½"	1¼"	1.05
13-657	3"	1½"	1.50
13-658	3½"	2"	2.15



BLACK BRISTLE END BRUSHES

Wood handle is bored to fit a spindle. Bristles are of good quality and mounted on a handle that is approximately 2 3/4" long.

No.	Thickness	Price
13-777	5 Knots	\$0.55
13-778	7 Knots	.60
13-779	10 Knots	.70



BLACK BRISTLE CASE BRUSHES

Cup shaped for cleaning and polishing inside of watch cases. Two rows of quality black bristles mounted on wood blocks bored to fit taper spindles. Length 2".

No.	Face Dia.	Price
13-792	1 1/2"	\$1.20
13-795	1 3/4"	1.30



BRISTLE AND WIRE BRUSHES ON ARBOR

These small brushes were designed for cleaning and polishing crevices and surfaces that are difficult to reach. The brushes are mounted on 3/2" arbors which fit most flexible shaft handpieces.

BRISTLE BRUSHES

No.	Style	Dia.	Each
13-802	Wheel	3/4"	\$0.15
13-804	Cup	5/8"	.15
13-805	Cup	1/2"	.15
13-806	End	—	.10

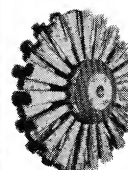
WIRE BRUSHES

No.	Style	Dimensions	Each
STEEL			
13-811	Wheel	.003" x 3/4"	\$0.40
13-812	Wheel	.005" x 1"	.35
13-814	Cup	.003" x 1/2"	.40
13-815	Cup	.005" x 1/2"	.35
13-816	End	.005"	.20
13-817	End	.003"	.20
BRASS			
13-821	Wheel	.003" x 3/4"	.40
13-822	Wheel	.005" x 1"	.35
13-825	Cup	.005" x 1/2"	.35
13-826	End	.005"	.20

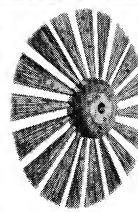
*Note: Wires with a thickness of .003" are straight whereas the .005" wire is crimped.

METAL SCRATCH WHEEL BRUSHES

For producing a satin finish on metals and for cleaning their surfaces. Brushes are made of fine straight wires mounted on wood blocks with lead centers to fit taper spindles. Nos. 13-912 thru 936 have brass wire for working on delicate surfaces while Nos. 13-938 thru 956 have straight steel wire for working on the harder metals.



No.	Dia.	Thickness	Each
BRASS WIRE			
13-912	2 1/2"	1 Row	\$0.90
13-914	3"	1 Row	.95
13-916	2"	2 Rows	1.30
13-918	2 1/2"	2 Rows	1.45
13-920	3"	2 Rows	1.60
13-924	2 1/2"	3 Rows	1.80
13-926	3"	3 Rows	2.10
13-928	3 1/2"	3 Rows	2.60
13-932	3"	4 Rows	2.90
13-936	4"	4 Rows	3.30
STEEL WIRE			
13-938	2 1/2"	2 Rows	1.45
13-940	3"	2 Rows	1.60
13-944	2 1/2"	3 Rows	1.80
13-946	3"	3 Rows	2.10
13-952	3"	4 Rows	2.90
13-958	4"	4 Rows	3.30



STEEL SATIN FINISH BRUSH

Produces a frosted finish when run at high speeds. One row of coarse steel wires mounted on wood block with lead center.

No.	Diameters		Price
	Overall	Block	
13-965	5"	1 1/2"	\$1.30

X-REFERENCE:
See pages 80 to 82 for polishing supplies.

BUFFS

HAND BUFFS

Used for the final cutting, polishing, lapping, and finishing of a broad variety of metals, plastic, wood and jewel stones.



FELT

Used with rouge to produce a high finish. Made of the best grade wool felt tightly compressed for uniform texture. Overall length approximately 11", with 6" felt strips.

No.	Style	Width	Price
14-113	Extra Hard	7/8"	\$0.40
14-114	Extra Hard	1/2"	.30
14-115	Hard	7/8"	.30
14-116	Hard	1/2"	.20



LEATHER

Will produce a high polished finish on metals when used with rouge or it can be used without compounds to remove fingerprints from polished metal surfaces. Overall length approximately 9", with 4" leather strip.

No.	Style	Width	Price
14-118	Black Leather	7/8"	\$0.45
14-119	Chamois	7/8"	.45
14-135	Elkskin	1/2"	.30
14-137	White Leather	1/2"	.30
14-139	Chamois	1/2"	.30



EMERY STICKS

For removing scratch marks and rust. Good quality emery paper 8 1/2" long, has been glued to 11" wood handle. Flat carried in grits 4/0 (coarsest), 2/0, 0, 1, 2, 3 & 4 (finest); other shapes 2/0 to 2.

No.	Style	Width	Each
14-211	Flat	7/8"	\$0.25
14-221	Half Round	1/2"	.25
14-241	Triangular	1/2"	.25



POLISHING STICK

Holds strips of emery paper or cloth 11" x 1". Abrasive is quickly and easily replaced. When worn... knob at end of handle releases clamp. Comes complete with 2 strips of emery cloth.

No.	O.L.	Description	Price
14-251	10 3/8"	Complete w/emery paper	\$1.00
14-253		Refill, 12 asstd. grits	1.00

WHEEL BUFFS

Used with abrasives or rouges in cutting, lapping, polishing and finishing.



MUSLIN WITH SHELLAC HARDENED CENTERS

Coarse for use with abrasive compounds such as tripoli and Finex for use with rouge to produce a high finish.

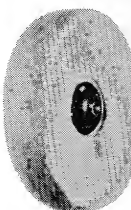
No.	Dia.	Stitching	Ply	Each
COARSE				
14-352	2"	2 rows	30	\$0.25
14-352 1/2	2 1/2"	2 rows	30	.30
14-353	3"	3 rows	35	.35
14-354	4"	3 rows	42	.55
14-355	5"	3 rows	45	1.00
14-356	6"	4 rows	50	1.35
14-357	7"	4 rows	50	1.80
14-358	8"	4 rows	55	2.20
FINEX				
14-364	4"	4 rows	50	.80
14-365	5"	5 rows	55	1.30
14-366	6"	6 rows	60	1.80



FINE MUSLIN WITH LEATHER CENTERS

For use with rouge to produce a high finish. Made of fine muslin, tightly stitched with leather patch sewn on center for firmer grip on taper spindle. Nos. 14-383 through 386 have razor edge for working in crevices and on narrow surfaces.

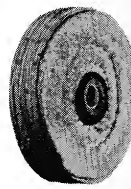
No.	Dia.	Stitching	Ply	Each
REGULAR EDGE				
14-413	3"	1 row	35	\$0.35
14-414	4"	1 row	40	.60
14-415	5"	1 row	45	1.20
14-416	6"	1 row	50	1.50
14-423	3"	3 rows	35	.45
14-424	4"	3 rows	40	.75
14-425	5"	3 rows	45	1.35
14-436	6"	4 rows	50	1.55
14-437	7"	4 rows	50	2.10
14-438	8"	4 rows	55	3.00
RAZOR EDGE				
14-383	3"	4 rows	9	.55
14-384	4"	4 rows	12	.75
14-385	5"	5 rows	12	.90
14-386	6"	7 rows	12	1.10



FINE MUSLIN WITH LEAD CENTERS

For use with rouge to produce a high finish. Made of loose, fine unstitched muslin with a lead center bored to fit taper spindles.

No.	Dia.	Ply	Price
14-373	3"	36	\$0.90
14-374	4"	36	1.15
14-375	5"	54	1.90
14-376	6"	54	2.45
14-377	7"	54	3.00
14-378	8"	54	3.80



CHAMOIS

For use with rouge to produce a quick high finish on gold and other soft metals. Tightly stitched, with leather patch sewn on center for firm grip on taper spindle.

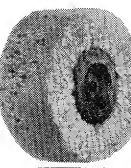
No.	Dia.	Ply	Price
14-312	2"	12	\$0.95
14-312 1/2	2 1/2"	12	1.20
14-313	3"	12	1.65
14-314	4"	18	3.25
14-315	5"	18	6.35



COTTON FLANNEL

Used with rouges for polishing. Made of soft stitched cotton flannel with shellac hardened centers.

No.	Dia.	Ply	Price
14-332	2"	30	\$0.30
14-332 1/2	2 1/2"	30	.35
14-333	3"	30	.45
14-334	4"	30	.60
14-335	5"	30	1.00
14-336	6"	30	1.20
14-337	7"	30	1.90
14-338	8"	30	2.70



COTTON THREAD

For use with rouge to produce a high finish. Made of soft cotton thread mounted on a wooden arbor that has been drilled for spindle use.

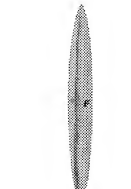
No.	Dia.	Rows	Price
14-391	2 1/2"	2	\$1.15
14-392	3"	2	1.50
14-394	2 1/2"	3	1.50
14-395	3"	3	1.90
14-398	3"	4	2.90



SOLID FELT

Holds tripoli or rouge during cutting and polishing. Made of the best grade wool felt tightly compressed for uniform texture. All have pin hole centers except 14-775 (3/16" hole) and 14-778 (1/2" hole).

No.	Dia.	Thick	Price
14-712	1 1/2"	1/4"	\$0.35
14-714	1 1/2"	1/2"	.55
14-722	2"	1/4"	.55
14-723	2"	3/8"	.65
14-724	2"	1/2"	.90
14-732	2 1/2"	1/4"	.65
14-733	2 1/2"	3/8"	1.05
14-734	2 1/2"	1/2"	1.25
14-735	2 1/2"	5/8"	1.50
14-736	2 1/2"	3/4"	1.95
14-744	3"	1/2"	1.95
14-746	3"	3/4"	2.70
14-748	3"	1"	3.20
14-754	4"	1/2"	2.90
14-756	4"	3/4"	4.70
14-758	4"	1"	5.70
14-775	6"	1"	8.00
14-778	6"	2"	15.00



FELT CREVICE

Fine tapered edges for cutting and polishing inaccessible joints. Made of extra hard processed solid felt with pin hole for taper spindle.

No.	Dia.	Price
14-643	1"	\$0.25
14-645	1 1/2"	.35
14-647	2"	.65
14-649	2 1/2"	1.10
14-651	3"	1.25

X-REFERENCE:

See pages 80 to 82 for polishing supplies.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



POINTED FELT CONES

For polishing objects that have small concave surfaces. Made of solid felt with opening for taper spindle.

No.	Length	Diam.	Price
14-613	1"	1/2"	\$0.30
14-615	1 1/2"	3/4"	.50
14-617	2"	1"	.90



FELT CASE BUFFS

Used with polishing rouges on watch cases and large flat surfaces. Felt is mounted permanently on wood handle which is bored to fit a spindle.

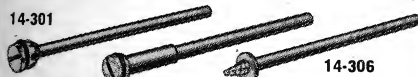
No.	Dia.	Price
14-603	3/4"	\$0.55
14-604	1"	.60
14-605	1 1/4"	.65
14-606	1 1/2"	.75



MIDGET WHEEL BUFFS & CONES

For polishing and producing a high finish in crevices and on surfaces that are difficult to reach. Easily attached to 3/32" arbors (see accessories) that fit most flexible shaft handpieces.

No.	Diam.	Each
CHAMOIS . . . Wheel		
14-310	7/8"	\$0.20
MUSLIN . . . Wheel, 16 Ply		
14-401	7/8"	.15
14-402	1"	.15
14-404	1 1/4"	.15
14-405	1 1/2"	.20
14-406	2"	.20
FELT CONES . . . 1/4" Thick		
14-610	3/8"	.20
14-611	1/2"	.20
FELT CREVICE		
14-640	1/2"	.20
14-641	5/8"	.20
SOLID FELT . . . Wheel, 1/8" Thick		
14-701	1/2" Hard	.10
14-702	1/2" Soft	.10
14-703	5/8" Hard	.10
14-704	5/8" Soft	.10
14-707	1" Hard	.15
14-708	1" Soft	.15



ACCESSORIES

Mandrels with 3/32" arbors for holding midget wheel buffs and cones.

No.	Description	Each
14-301	Plain Mandrel	\$0.15
14-303	Reinforced Mandrel	.25
14-306	Taper Screw Mandrel	.20



KNIFE EDGE WOOD LAP

Used with abrasives and sometimes rouge for cutting and polishing joints. Close grained wood has a hole for taper spindle.

No.	Diam.	Price
14-491	3"	\$0.55

RING BUFFS

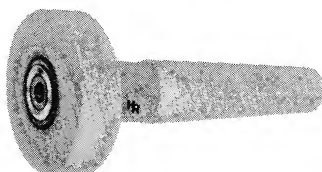
For grinding, smoothing, finishing and polishing the inside portion of rings and similar shaped objects.



FELT INSIDE RING BUFFS

Used with rouge to produce a high finish on inside of rings. Made of good quality felt, of uniform texture, with hole for taper spindle. Nos. 14-622 thru 625 have felt mounted on wood mandrel. Nos. 14-638 and 14-639 are solid felt.

No.	Dimensions		Price
	O. L.	Felt	
14-622	4 3/8"	2 7/8" x 3/4"	\$0.65
14-623	4 1/2"	3" x 3/4"	.80
14-624	5 3/8"	4" x 7/8"	1.10
14-625	6 3/8"	5" x 1"	1.65
14-638	—	3" x 3/4"	.65
14-639	—	4" x 3/4"	.95



FELT COMBINATION WHEEL AND INSIDE RING BUFFS

Wheel buff and inside ring buff are mounted on same wood mandrel so that complete ring surface (inside and out) can be polished. Mandrel has hole for taper spindle.

No.	Dimensions			Price
	O. L.	Wheel	Inside Buff	
14-633	4 3/8"	2" x 7/8"	3" x 3/4"	\$1.95
14-634	5 3/8"	2" x 1 1/8"	4" x 7/8"	2.30



SANGER'S EMERY PAPER INSIDE RING SHELLS

For smoothing and refinishing insides of rings. Emery paper shells fit snugly over wood mandrel that is drilled for use on taper spindle. Available in grits: 4/0 (Coarsest), 3/0, 2/0, 0, 1, 2, 3, and 4 (Finest).

No.	Description	Price
14-501	Shells only, specify grit	\$1.00 Doz.
14-511	Set of 12 assorted shells	1.00 Set
14-512	6 Assorted shells and wood mandrel	.75 Set

SUPER SANGER'S EMERY CLOTH INSIDE RING SHELLS

Greatly outlasts emery paper. For smoothing and refinishing inside of rings. Emery cloth shells fit snugly over wood mandrel that is drilled for use on taper spindle. Available in grits: 4/0 (Coarsest), 2/0, 1, 3, 4 (Finest), and Crocus.

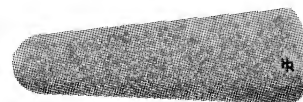
No.	Description	Price
14-506	Shells only, specify grit	\$1.50 Doz.
14-516	Set of 12 assorted shells	1.50 Set
14-517	6 Assorted shells and wood mandrel	1.00 Set



WOOD EMERY PAPER MANDREL

Slit holds one end of emery paper while it is wound around mandrel. Other end is held in place by a rubber band. Emery paper shells can be cut without waste from standard size sheets. Mandrel has hole for taper spindle.

No.	Length	Price
14-500	4"	\$0.40



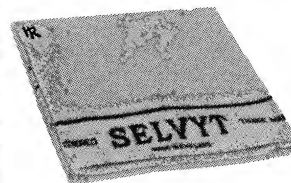
SOLID EMERY CONES

For grinding insides of rings, etc. Length approximately 2 3/4", diameter 1". Have lead centers with 1/4" wide spindle hole. Available in grits: Medium and Extra Fine.

No.	Description	Price
14-495	Set of 2	\$4.50

BUFFING CLOTHS

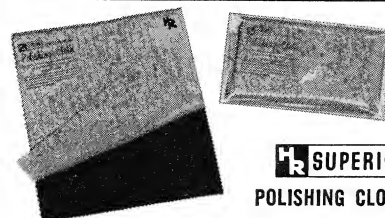
For cleaning, polishing and/or finishing a wide variety of surfaces.



SELVYT CLOTHS

Give a mirror like finish without scratching. This special, English made, no-lint polishing cloth is better than chamois. It polishes metals, optical lenses, cutlery, records, furniture, leather goods, etc. Hardwearing and durable, it can be washed again and again without losing its polishing qualities.

No.	Dimensions	Price
51-750	5" x 5"	\$0.30
51-751	10" x 10"	1.15
51-752	14" x 14"	1.75
51-753	17" x 14"	1.95
51-754	21" x 17"	3.00
51-755	21" x 20"	3.35



SUPERIOR POLISHING CLOTHS

A double cloth, one side is impregnated with jewelers rouge for cleaning and polishing silver, gold, platinum, nickel or chrome. The opposite side keeps the user's hands clean and is used for the final polish. Comes in plastic case.

No.	Dimensions	Price
51-730	9" x 11"	\$0.45
51-731	19" x 15"	.95

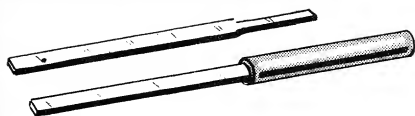


SHINO POLISHING CLOTHS

A double cloth, one with jeweler's rouge and other side for final polishing. Comes in plastic pouch.

No.	Dimensions	Price
51-740	12" x 14"	\$0.90

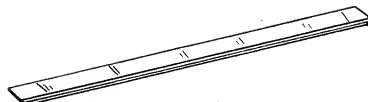
BURNISHERS AND BURS



PIVOT BURNISHER

2" long hardened steel blade with one edge rounded for burnishing conical pivots.

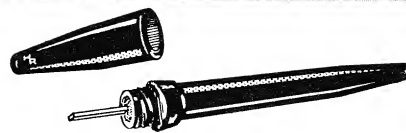
No.	Description	Price
15-033	Blade only	\$1.50
15-034	Blade and Handle	1.75



BELL METAL SLIP

Brass blade that can be charged with polishing paste for polishing pivots.

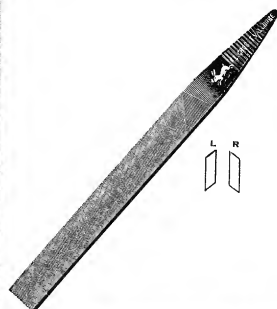
No.	O. L.	Price
15-060	6"	\$0.45



SAPPHIRE PIVOT BURNISHER

Excellent for burnishing miniature pivots such as those found in watches. Edge has been rounded and is anchored in a plastic handle with cover.

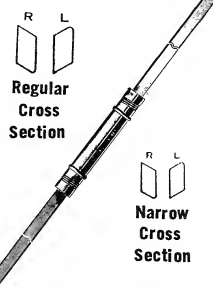
No.	O. L.	Price
15-110	4 1/2"	\$5.95



PIVOT FILES AND BURNISHERS

For smoothing and polishing small pivots and similar shaped objects.

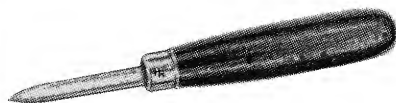
No.	Style	Dimensions	Price
FILES			
23-563	Conical-Right	2 1/4"x1 1/4"	\$2.20
23-564	Conical-Left	2 1/2"x3/8"	2.20
BURNISHERS			
23-581	Regular-Right	2 1/4"x1 1/4"	1.90
23-583	Conical-Right	2 1/4"x1 1/4"	2.10



UNIVERSAL COMBINATION PIVOT FILES AND BURNISHERS

For smoothing and polishing small pivots and similar shaped objects. File and burnisher protected by screw threaded metal caps. Length approximately 7 1/2".

No.	Style	Dimensions	Price
23-541	Regular-Right	2 1/4"x1 1/4"	\$5.10
23-542	Regular-Left	2 1/4"x1 1/4"	5.10



STRAIGHT BLADES

No.	Blade	Price
15-001 1/2	1 1/2"	\$1.15
15-002	2"	1.20
15-002 1/2	2 1/2"	1.25
15-003	3"	1.35

SETTING BURNISHERS

Oval shaped tool steel burnishers for setting stones and jewels. Metal is highly polished and anchored securely in 3 1/2" seasoned hardwood handles.



CURVED BLADES

No.	Blade	Price
15-011 1/2	1 1/2"	\$1.15
15-012	2"	1.20
15-012 1/2	2 1/2"	1.25
15-013	3"	1.30



CURVED SLIM BLADE

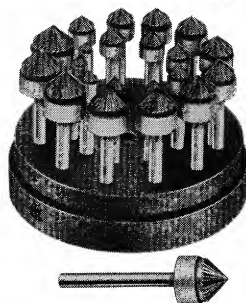
No.	Blade	Price
15-031	1 3/4"	\$1.15



BURNISHER HANDLE

Hardwood handle with metal ferrule 1/2" in diameter.

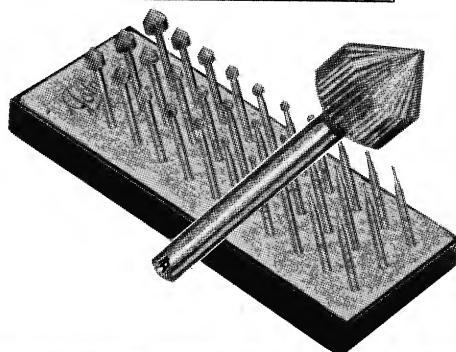
No.	O. L.	Dozen
27-150	3 3/4"	\$2.25



BUSER STYLE STONE SETTING BURS

Used for cutting stone seats. Only tops are cut and sides regulate cut to exact depth. For stones from 1/6 carat to 2 carats. Diameters range from 2.55 to 9.9mm with 1/8" shanks. Set comes in plastic stand with cover.

No.	Description	Price
33-185	Set of 22	\$8.50



STONE SETTING BURS

For drilling stone setting seats in soft and hard metals. Burs have been designed to drill the setting so the stone will always set flat and even.

PERFECTION STONE SETTING BURS

Used for cutting stone seats so that stones will set flat and even. All have 1/8" shanks. Two discs included for gauging depth of cut. Set comes in plastic stand with cover.

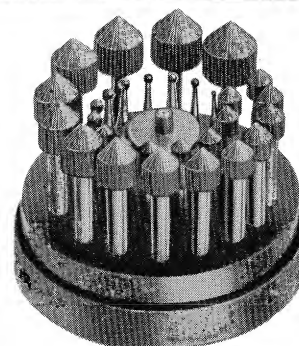
No.	Description	Price
33-171	Set of 30 . . . sizes below	\$6.65

SEPARATE SIZES No. 33-391 — Specify Bur No.

Bur No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
mm Size	1.0	1.2	1.4	1.7	2.0	2.2	2.5	2.7	2.9	3.0	3.5	3.7	4.0	4.3	4.7
Doz.	\$1.80	1.80	1.80	1.80	1.80	1.80	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	3.60

Bur No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
mm Size	5.0	5.3	5.7	6.0	6.3	6.7	7.0	7.4	7.7	8.0	8.4	8.6	9.0	9.4	9.9
Doz.	\$3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	5.40	5.40	5.40	5.40	5.40	5.40

Specify Order No. and Bur No. when ordering.



VANADIUM STONE SETTING BURS

Used for cutting stone seats. Made of Vanadium Steel with 1/8" shanks. Set comes in bakelite stand with cover.

No.	Description	Set
33-172	Set of 30 . . . sizes in table	\$9.95

SEPARATE SIZES

No. 33-392 — Specify Bur No.

Bur No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
mm Size	0.81	0.90	1.19	1.40	1.60	1.82	2.05	2.29	2.42	2.54	2.64	3.00	3.14	3.26	3.46
Doz.	\$2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00

Bur No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
mm Size	3.60	3.70	3.96	4.22	4.46	4.70	4.96	5.20	5.40	5.60	5.96	6.40	7.38	8.99	9.54
Doz.	\$4.00	4.00	4.00	4.00	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	7.00	7.00

Specify Order No. and Bur No. when ordering.

Bur No.	Di. Carb.
2/0	0.80
0	0.90
1	1.05
2	1.20
3	1.35
4	1.50
5	1.65
6	1.80
7	2.10
8	2.30
9	2.50
10	2.70
11	2.80
12	3.00
13	3.20
14	3.50
15	3.70
16	4.00
17	4.20
18	4.40
19	4.60
20	5.00
22	5.50
23	5.80
24	6.00
25	6.20
26	6.40
27	6.60
28	7.00
29	7.20
30	7.40
31	7.60
32	8.00
33	8.20
34	8.40

Note: T

No.
33-18
33-19
33-20
33-21
33-22
33-23
33-24
33-25
33-26
33-27
33-28
33-29
33-30

BURS

A wide assortment of shapes and sizes for cutting and drilling hard and soft metals. The **Carbon Steel Burs** are made of an alloyed silver steel, carefully heated and tempered, with each blade set at the best cutting angle. The **High Speed Burs** are made from the best grades of high speed steel for longer wear and a sharp cutting edge. All burs have $\frac{3}{32}$ " shanks that fit most flexible shaft hand pieces.

			Round		Bud		Cone		Inv. Cone		Sq. Edge Wheel		Cylinder		45° Bearing		Setting		90° Bearing		Round Edge Wheel		Flame		Tree		Cone Reamer		Slim Reamer		Short Cone			
			No. 33-302 Carb. S. Doz.		High S. Each		No. 33-342 Carb. S. Doz.		High S. Each		No. 33-316 Carb. S. Doz.		High S. Each		No. 33-356 Carb. S. Doz.		High S. Each		No. 33-303 Carb. S. Doz.		High S. Each		No. 33-343 Carb. S. Doz.		High S. Each		No. 33-309 Carb. S. Doz.		High S. Each		No. 33-349 Carb. S. Doz.		High S. Each	
Bur No.	Diameters		Carb. S.	High S.																														
2/0	0.80	0.80mm	\$1.00	—	\$1.00	—	\$1.00	—	\$1.00	—	\$1.00	—	\$1.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
0	0.90	0.90mm	1.00	—	1.00	—	1.00	—	1.00	—	1.00	—	1.00	—	1.25	—	—	\$2.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1	1.05	1.05mm	1.00	\$0.95	1.00	—	1.00	—	1.00	—	1.00	—	1.00	—	1.25	—	2.40	—	—	—	—	\$1.20	\$1.20	1.20	—	—	—	—	—	—	—	—	—	
2	1.20	1.20mm	1.00	.95	1.00	\$0.95	1.00	\$0.95	1.00	\$0.95	1.00	—	1.00	—	1.25	—	2.40	—	—	—	1.20	1.20	1.20	—	—	—	—	—	—	—	—	—	—	
3	1.35	1.35mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	—	1.00	—	1.25	—	2.40	\$1.20	—	—	1.20	1.20	1.20	—	—	—	—	—	—	—	—	—	—	
4	1.50	1.50mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	—	1.00	—	1.25	—	2.40	—	—	—	1.20	1.20	1.20	—	—	—	—	—	1.20	—	—	—	—	
5	1.65	1.70mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	\$1.20	1.00	\$1.20	1.25	\$1.20	2.40	—	—	—	1.20	1.20	1.20	\$1.20	—	—	\$1.20	—	—	—	—	—	—	
6	1.85	1.90mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	—	1.00	—	1.25	—	2.40	1.20	—	—	1.20	1.20	1.20	—	—	—	1.20	—	—	—	—	—	—	
7	2.10	2.10mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	—	1.00	—	1.25	—	2.40	—	—	—	1.20	1.20	1.20	—	—	—	—	—	—	—	—	—	—	
8	2.34	2.30mm	1.00	.95	1.00	.95	1.00	.95	1.00	.95	1.00	1.20	1.00	1.20	1.25	1.20	2.40	—	—	—	1.20	1.20	1.20	1.20	1.20	—	1.20	—	1.20	—	—	—	—	
9	2.55	2.50mm	1.75	1.35	1.75	1.35	1.75	1.35	1.75	1.35	1.75	—	1.75	—	2.60	—	4.80	1.60	—	—	1.60	1.60	1.60	—	—	—	—	—	—	—	\$1.60	\$1.60	—	
10	2.70	2.70mm	1.75	1.35	1.75	1.35	1.75	1.35	1.75	1.35	1.75	—	1.75	—	—	—	4.80	—	—	—	1.60	1.60	1.60	—	—	—	1.60	—	—	—	—	—	—	
11	2.85	2.90mm	1.75	1.35	1.75	1.35	1.75	1.35	1.75	1.35	1.75	—	1.75	—	—	—	4.80	—	—	—	1.60	1.60	1.60	—	—	—	—	—	—	—	—	—	—	
12	3.00	3.10mm	1.75	1.35	1.75	1.35	1.75	1.35	1.75	1.35	1.75	—	1.75	—	2.60	—	4.80	1.60	—	—	1.60	1.60	1.60	—	—	—	1.60	—	—	—	—	—	1.60	
13	3.25	3.30mm	2.70	1.35	2.70	1.35	2.70	1.35	2.70	1.35	2.70	1.60	—	1.60	—	1.60	7.20	—	—	—	1.60	1.60	1.60	1.60	—	—	1.60	—	—	—	1.60	—	—	
14	3.50	3.50mm	2.70	1.35	2.70	1.35	2.70	1.35	2.70	1.35	2.70	—	2.70	—	—	—	7.20	—	—	—	1.60	1.60	1.60	—	—	—	1.60	—	—	—	—	—	—	
15	3.75	3.80mm	2.70	1.35	2.70	1.35	2.70	1.35	2.70	1.35	2.70	—	2.70	—	—	—	7.20	1.60	—	—	1.60	1.60	1.60	—	—	—	—	—	—	—	—	—	1.60	
16	4.00	4.00mm	2.70	1.35	2.70	1.35	2.70	1.35	2.70	1.35	2.70	—	2.70	1.60	—	1.60	7.20	—	—	—	1.60	1.60	1.60	1.60	—	—	1.60	—	—	—	—	—	—	
17	4.25	4.30mm	*4.00	1.35	4.00	—	4.00	—	4.00	—	4.00	—	—	—	—	—	—	—	—	—	1.60	1.60	1.60	—	—	—	—	—	—	—	—	—	—	
18	4.50	4.50mm	4.00	1.35	4.00	1.35	4.00	1.35	4.00	1.35	4.00	—	4.00	—	—	—	9.60	1.60	—	—	1.60	1.60	1.60	—	—	—	1.60	—	—	—	—	—	—	
19	4.75	4.70mm	4.00	1.70	—	—	4.00	—	4.00	—	4.00	1.95	—	1.95	—	1.95	9.60	—	—	—	1.95	1.95	1.95	1.95	—	—	1.95	—	—	1.95	—	—	1.95	
20	5.00	5.00mm	4.00	1.70	4.00	1.70	4.00	1.70	4.00	1.70	4.00	—	4.00	—	—	—	9.60	—	—	—	1.95	1.95	1.95	—	—	—	1.95	—	—	—	—	—	—	
22	5.50	5.20mm	5.50	1.70	5.50	1.70	5.50	1.70	5.50	1.70	—	—	—	—	—	—	—	—	—	—	1.95	1.95	1.95	—	—	—	1.95	—	—	—	—	—	—	
23	5.75	5.40mm	—	1.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.95	1.95	—	—	—	—	—	—	—	—	—	—	
24	6.00	5.60mm	5.50	1.70	5.50	1.70	5.50	1.70	5.50	1.70	—	—	—	—	—	—	—	—	—	—	—	1.95	1.95	—	—	—	1.95	—	—	—	—	—	—	
25	6.25	5.90mm	—	1.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.95	1.95	—	—	—	—	—	—	—	—	—	—	
26	6.50	6.30mm	5.50	1.95	5.50	1.95	5.50	1.95	5.50	1.95	—	2.20	—	2.20	—	2.20	—	2.20	—	2.20	—	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	—	—	
27	6.75	6.70mm	—	1.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20	—	—	—	—	—	—	—	—	—	—	
28	7.00	7.20mm	5.50	1.95	5.50	1.95	5.50	1.95	5.50	1.95	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20	—	—	—	—	—	—	—	—	—	—	
29	7.25	7.60mm	—	1.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20	—	—	—	—	—	—	—	—	—	—	
30	7.50	8.00mm	5.50	1.95	5.50	1.95	5.50	1.95	5.50	1.95	—	2.20	—	2.20	—	2.20	—	2.20	—	2.20	—	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	—	—	
31	7.75	8.90mm	—	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.60	2.60	—	—	—	—	—	—	—	—	—	—	
32	8.00	9.60mm	5.50	2.35	5.50	2.35	5.50	2.35	5.50	2.35	—	—	—	—	—	—	—	—	—	—	—	2.60	2.60	—	—	—	—	—	—	—	—	—	—	
33	8.25	10.40mm	—	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.60	2.60	—	—	—	—	—	—	—	—	—	—	
34	8.50	11.00mm	5.50	2.35	5.50	2.35	5.50	2.35	5.50	2.35	—	—	—	2.60	—	2.60	—	—	—	—	—	2.60	2.60	2.60	—	—	—	—	—	—	2.60	—	—	

Note: There is no Bur Size No. 21



ASSORTMENTS OF HIGH SPEED BURS

Sets of High Speed Steel Burs in the most popular shapes and sizes. Packaged in hardwood boxes that have extra holes so that additional sizes can be added.

No.	Type	Bur Nos.	Quantity	Set
33-182A	Round	1 thru 30	29	\$36.00
33-182B	Round	1 thru 34	33	43.00
33-192A	Setting	1 thru 30	29	41.00
33-192B	Setting	1 thru 34	33	48.00
33-188A	90° Bearing	2 thru 28 (even nos. only)	14	20.00
33-188B	90° Bearing	1 thru 34	33	48.00
33-193	Flame	2 thru 30 (even nos. only) except 28	14	20.00
33-196	Bud	All sizes 2 thru 14 and Even sizes 16 thru 34	23	30.00
33-183	Pointed Cone	All sizes 2 thru 14 and Even sizes 16 thru 34	23	30.00

KNIFE EDGE WHEEL BURS



Available in carbon steel only, and only in the following sizes.

No.	Sizes	Each
33-326	7.0mm	\$1.25
	10.0mm	1.25
	12.0mm	1.35
	14.0mm	1.60

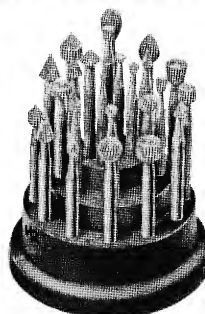
ROUND EDGE WHEEL BURS



Following sizes are available in carbon steel... see table above for high speed steel.

No.	Sizes	Each
33-328	7.0mm	\$1.25
	10.0mm	1.25
	12.0mm	1.35
	14.0mm	1.60

GROBET BURS



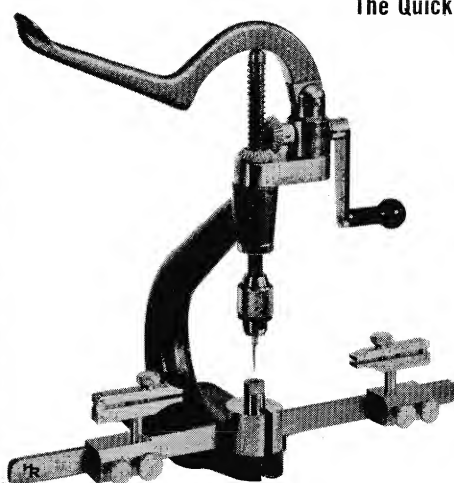
24 Tungsten Steel burs in assorted shapes with $\frac{1}{8}$ " shanks. Supplied in fine cut for use on steel, castings, bronze, white gold, etc. Set comes in plastic stand with cover.

No.	Description	Price
33-110	Set of 24	\$15.95

BUSHING TOOL AND ACCESSORIES

BUSHING TOOL

The Quick and Easy Way to Replace Worn Bearings in ALL Kinds of
Clocks, Meters, Clockwork Mechanisms, etc.



KWM UNIVERSAL BUSHING TOOL

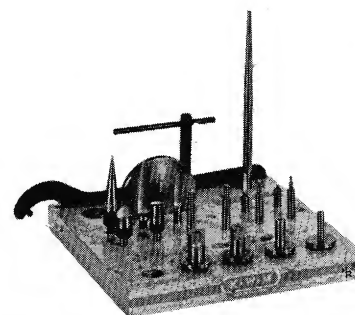
1. Use the KWM pivot gauge to determine the appropriate KWM bushing. The gauge gives the correct bore of the bushing, the height of the bushing to suit the thickness of the plate, and the size of the KWM reamer to fit the outer diameter of the bushing.
2. Select the KWM bushing from the cabinet which is ingeniously designed to eliminate the need for searching, removal and replacement of cork or screw caps, possibility of confusing sizes, etc.
3. Centre and ream out the old bearing with the KWM Universal Bushing Tool.
4. Press in the new KWM Bushing.

THE JOB IS DONE! No need for any additional work such as riveting, making a recess for oil retention, removal of riveting burrs or broaching out . . . the bushing fits the pivot correctly and the wheel will have its correct endshake.

Equipped as follows:

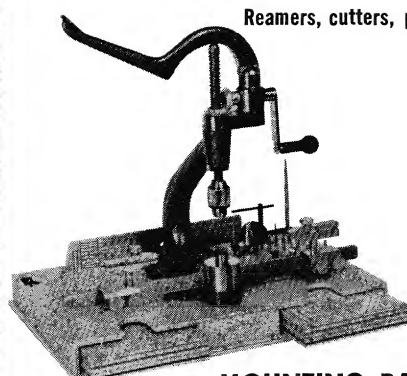
- Staking Tool Frame complete with crank pressure shaft fitted with Jacobs style chuck capacity 0 to 4 mm., and 2 adjustable clamps mounted on guide bar.
- Set of 5 Anvils
- Set of 5 Reamers
- Set of 5 Pushers
- Base Plate
- Hook Key (for adjusting position of pressure lever)
- Tightening Key for chuck
- Wood Stand for accessories
- Chamfering Cutter
- Centering Point
- Pin for removing Chuck from shaft

No.	Description	Price
15-200	Complete as described	\$149.50



BUSHING TOOL ACCESSORIES

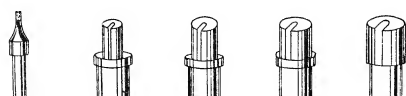
Reamers, cutters, pushers, stumps and other needed accessories for the KWM Universal Bushing Tool



MOUNTING BASE

Wood base for mounting KWM bushing tool and all accessories with compartments to slide in two KWM bushing assortments.

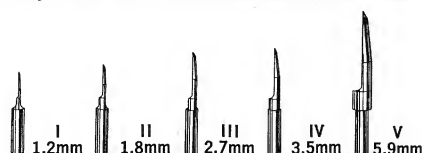
No.	Dimensions	Price
15-205	14 3/8" x 9 3/4"	\$15.50



PUNCH & STUMPS FOR STAKING ALARM CLOCK STAFFS

Easy replacement of balance staffs in alarm clocks without danger of damaging balance.

No.	Description	Price
15-207	1 Pusher, 4 Stumps	\$9.50



REAMERS

Replacement — Set of 5 reamers (1 thru 5) for KWM Bushing Tool.

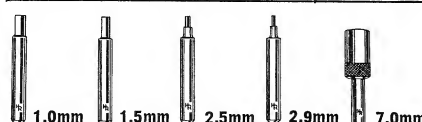
No.	Description	Price
15-214	Without Side Screws	\$9.50

Hand Reamer Set — Reamers 1 thru 5 with side screws, special handle, and chamfering cutter for setting bushings without use of KWM frame.

No.	Description	Price
15-210	With Side Screws	\$15.50

Bergeon Tool Set — Reamers 1 thru 5 with shanks that fit Bergeon tool for those who wish to use KWM bushing.

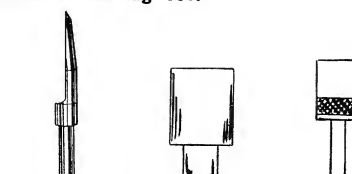
No.	Description	Price
15-213	Without Side Screws	\$10.95



PUSHERS

Replacement set of 5 pushers for KWM bushing tool.

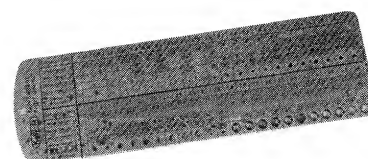
No.	Description	Price
15-215	Without Side Screws	\$10.95



REAMER, ANVIL AND PUSHER FOR LARGE BUSHINGS

For 8.7mm bushings used for center wheels and barrel arbors of grandfather clocks and industrial movements.

No.	Description	Price
15-208	Reamer, Anvil & Pusher	\$6.50



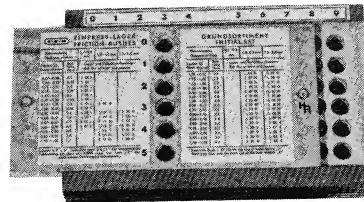
PIVOT GAUGE

Shows diameter of pivot and reference number of both KWM reamer and bushing. Capacity 0.1mm to 4.8mm as follows: 0.1mm to 0.6mm by 0.05mm; 0.6mm to 3.0mm by 0.1mm; and 3.0mm to 4.8mm by 0.2mm.

No.	Capacity	Price
24-412	0.1mm to 4.8mm	\$9.20

KWM FRICTION BRASS BUSHING ASSORTMENTS

The choice of sizes in these assortments was made in accordance with the clock repairers needs. Specially designed cabinets allow for easy storage (in quantity), and speedy finding of the proper size bush... to find bush size L37 push the cover with the vertical row of holes underneath number 7 of the upper horizontal row of figures, the desired bush L37 will now be found in hole number 3 in the vertical row. Comes complete with chart showing Pivot diameter, Bore and Model Number of corresponding bush.



In slide cover wood cabinets to fit wood Base No. 15-205

No. 72-201 — Initial Set. 590 bushings ranging in pivot hole diameters from 0.07 mm to 4.45 mm\$21.95

No. 72-202 — Supplementary Set. 580 bushings ranging in pivot hole diameters from 0.23 mm to 4.65 mm.....\$21.95

No. 72-203 — Complete Set. 1170 bushings ranging in pivot hole diameters from 0.07 mm to 4.65 mm\$43.90

KWM BUSHINGS

How to select the right bushing


The numbers prefixed by the letter L (L57) in the chart below indicates the bushing numbers and also serves as a refill number for the various assortments.

To select the correct bushing, first measure the pivot and find its measurement in the range of sizes shown in column Z. By reading across you will find the various bushings that will fit this size pivot.

If more than one size bushing is available select the thickness of the bushing you need by referring to the top line of the chart alongside the letter "H" and the correct diameter by referring to the second line after the letter "D".

After choosing the bushing read up the column to line "RN" which indicates the size reamer to be used for the selected bushing...reamers are identified by the Roman Numerals.

Z Pivot-Diameter	B Bore	H	1,0				1,4				1,7				1,9				2,7				3,0				4,0
		D	1,2	1,8	1,8	2,7	3,5	5,9	5,9	1,8	2,7	3,5	1,8	2,7	3,5	5,9	8,7	8,7									
		R	1,17	1,77	1,77	2,67	3,46	5,8	5,8	1,77	2,67	3,46	1,77	2,67	3,46	5,8	8,6	8,6									
		RN	I	II	III	IV	V	V	II	III	IV	II	III	IV	V	VI	VI										
0,07—0,08	0,1		L 55																								
0,10—0,12	0,15		L 56																								
0,15—0,17	0,2		L 01																								
0,19—0,21	0,25		L 57																								
0,23—0,25	0,3		L 02		L 64					L 86																	
0,27—0,30	0,35		L 58																								
0,32—0,35	0,4		L 03		L 08					L 87																	
0,38—0,40	0,45		L 59																								
0,42—0,45	0,5		L 04		L 09					L 32				L 94													
0,48—0,50	0,55		L 60																								
0,53—0,55	0,6		L 05		L 10					L 33				L 95													
0,57—0,60	0,7		L 06		L 11					L 34				L 96													
0,65—0,70	0,8		L 07		L 12					L 35				L 97													
0,75—0,80	0,9			L 61	L 13					L 36				L 98													
0,85—0,90	1,0			L 62	L 65	L 14				L 37				L 99													
0,95—1,00	1,1			L 63	L 66	L 15					L 38			L 100													
1,05—1,10	1,2					L 16					L 39			L 101													
1,15—1,20	1,3					L 17					L 40			L 102													
1,25—1,30	1,4					L 18					L 41			L 103													
1,35—1,40	1,5					L 19					L 42			L 104													
1,45—1,50	1,6					L 20					L 43			L 105													
1,55—1,60	1,7					L 67					L 88			L 106													
1,65—1,70	1,8					L 21					L 44			L 107													
1,75—1,80	1,9					L 68					L 89			L 108													
1,85—1,90	2,0						L 22							L 45													
1,95—2,00	2,1						L 69							L 90													
2,05—2,10	2,2						L 23							L 46													
2,15—2,20	2,3						L 70							L 91													
2,25—2,30	2,4						L 24							L 47													
2,35—2,40	2,5						L 71							L 92													
2,45—2,50	2,6						L 25							L 48													
2,55—2,60	2,7						L 72							L 93													
2,65—2,70	2,8						L 26							L 49													
2,75—2,80	2,9									L 79																	
2,85—2,90	3,0									L 73	L 80																
2,95—3,05	3,2									L 27	L 50																
3,10—3,25	3,4									L 28	L 51																
3,30—3,45	3,6									L 74	L 81																
3,55—3,65	3,8									L 29	L 52																
3,75—3,85	4,0									L 75	L 82																
3,90—4,05	4,2									L 76	L 83																
4,15—4,25	4,4									L 30	L 53																
4,35—4,45	4,6									L 77	L 84																
4,55—4,65	4,8									L 31	L 54																
4,75—4,85	5,0									L 78	L 85																
5,00—5,05	5,2																										
5,15—5,25	5,4																										
5,35—5,45	5,6																										
5,55—5,65	5,8																										
5,75—5,85	6,0																										
5,95—6,05	6,2																										
6,15—6,25	6,4																										
6,35—6,45	6,6																										
6,55—6,65	6,8																										

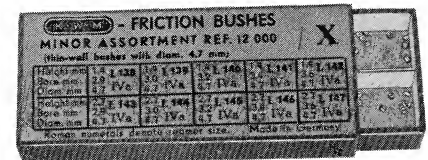


Z = Pivot
H = Height
D = Diameter
B = Bore

All measurements are in millimeters.

KWM BUSHINGS MINOR ASSORTMENTS

For the limited requirements of small workshops or bulk use of needed sizes. Each assortment contains 10 bushes each of 10 different sizes, 100 pieces, (except No. 72-219) in a partitioned cardboard cabinet with a chart showing sizes.



No. 72-211 — For miniature clocks and small alarm clocks. Covers diameters 0.15 to 0.7 mm, height 1 mm.....\$3.25

No. 72-212 — For alarm clocks with thin pivots. Covers pivot diameters 0.4 to 1.3 mm, height 1.4 mm.\$3.25

No. 72-213 — For alarm clocks with thick pivots. Covers pivot diameters 1.4 to 1.3 mm, height 1.4 mm.\$3.25

No. 72-214 — For alarm clock center wheels and barrel arbors. Cover pivot diameters 3.2 to 4.8 mm, heights 1.4 and 1.7 mm.\$3.25

No. 72-215 — For mantel clock and wall clocks with thin pivots. Covers pivot diameters 0.3 to 1.2 mm, height 1.9 mm.\$3.25

No. 72-216 — For mantel clocks and wall clocks with thick pivots. Covers pivot diameters 1.3 to 2.8 mm, height 1.9 mm.\$3.25

No. 72-217 — For grandfather clock and wall clocks with thin pivots. Covers pivot diameters 0.5 to 2.0 mm, height 2.7 mm.\$3.25

No. 72-218 — For grandfather clocks and wall clocks with thick pivots. Covers pivot diameters 3.0 to 4.8 mm, height 2.7 mm.\$3.25

No. 72-219 — For grandfather clocks and industrial movement center wheels and barrel arbors. Covers pivot diameters 5.0 to 6.8 mm, height 3.0 and 4.0 mm, outside diameter 8.7 mm. Larger reamer, anvil and pusher required for this assortment, see 15-208 on page 2.\$4.25

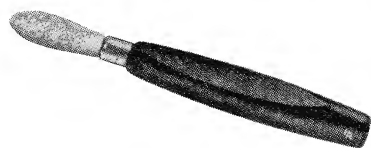
No. 72-220 — Thin-wall bushings with diameter 4.7 mm. Covers pivot diameters 2.9 to 3.6 mm, height 1.4 and 2.7 mm.\$3.25

REFILLS

Refills of individual numbers are available in cellophane packages. Packages L01 to L127 contain 20 bushings. Packages L128 to L137 contain 10 bushings.

H	B	D	Reference number
1,9	1,0	1,8	L 37
Measurements in mm			
20 pieces			
KWM			
FRICTION BUSHES			
Made in Germany			

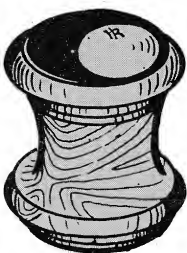
CASE TOOLS



K&D CASE OPENER

Oval shaped, sharp, well tempered steel blade mounted in a non-rolling hardwood handle, with closed end ferrule.

No.	Length	Price
16-794	4½"	\$1.50



PRESCOTT CASE OPENER

For removing screw backs and bezels. Ends are concave and lined with rubber. Two different diameters open all sizes 0 to 18s.

No.	Diameters	Price
16-801	2" and 1½"	\$1.45

VACUUM CASE OPENER



For removing screw backs and bezels. Made of solid rubber ⅝" thick with two different diameters. For sizes 0 to 18s.

No.	Diameters	Price
16-802	1⅞" x 1½"	\$1.05



SUCTION TYPE CASE OPENER

Pressure and a jerky turn open most cases. For tight cases use a case vise, put staking tool punch in hole and tap lightly with a mallet. Will not mar soft metals.

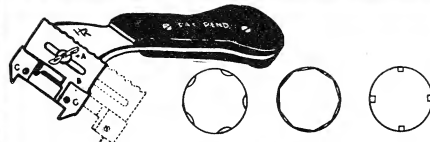
No.	Description	Price
16-911	With rubber handle	\$1.55
16-912	Without handle	1.05



FRANK'S WATERPROOF CASE OPENER

For opening all shapes and sizes of waterproof cases...will not slip. Sturdily made with double-end pins (flat and round) and screw handle to adjust and lock-in pins. Completely nickel plated.

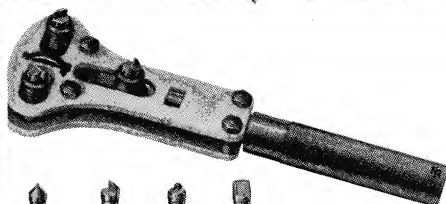
No.	Length	Price
16-901	4¾"	\$8.95



SPANNER TOOL

For opening most shapes and sizes of waterproof cases. Jaws are easily adjusted and locked in place. Fibre covered handle is shaped to provide leverage necessary for the tightest cases.

No.	Length	Price
16-910	4¾"	\$4.50



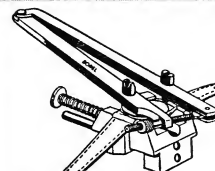
ACCESSORIES

No.	Description	Price
16-914P	Pin No. (Specify)	\$0.40

JAXA WATERPROOF CASE WRENCH

Opens every size and shape of waterproof case—knurled, polygon or with any odd or even number of slots, notches or holes. There is no slipping to mar case backs. Complete with 4 sets of pins that can be easily removed and replaced. This is a precision tool made for hard use. Handle and body of tool are chrome plated to prevent rust. Comes in plastic case that holds wrench and pins.

No.	Description	Price
16-914	Complete as described	\$13.95
16-914W	Fitted Wood Case	2.95



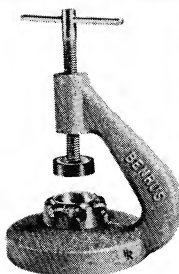
WATERPROOF CASE WRENCH

For opening practically all shapes and sizes of waterproof cases. Specially designed double-end pins provide quick action setting and fast case removal without damage. Handle is rust resistant.

No.	Length	Price
16-916	6¾"	\$8.75

BENRUS CASE OPENER

Specially designed to open and close Benrus waterproof watches. Comes complete with 6 plastic fixtures, case and instructions.



No.	Height	Price
16-908	5½"	\$8.95



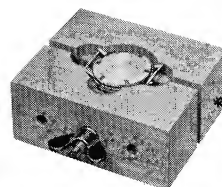
WATERPROOF CASE OPENING PLIERS

Jaws fit into slots in case back. By twisting the handle the case back can be easily unscrewed.

No.	Length	Price
37-077	5"	\$5.00

WOOD WATERPROOF CASE VISE

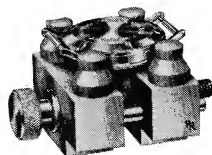
Will not mar watch case. Has coil spring action and guide pins to hold jaws parallel and wing nut for locking in position. Both vises are reversible.



No.	Dimensions	Price
16-920	3½"x3¼"x1½"	\$1.75
16-921	2¾"x2¾"x1"	1.30

JAXA WATERPROOF CASE VISE

Has plastic covered posts to prevent marring of case or crystal. Posts adjustable to fit all case sizes.

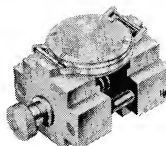


Metal frame fit in any bench vise and leaves both hands free to open the most stubborn case. Guide pins keep jaws parallel.

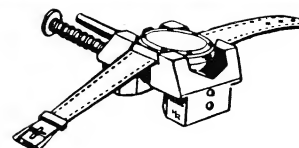
No.	Dimensions	Price
16-925	2½"x1¾"x1"	\$5.50

METAL WATERPROOF CASE VISE

Does not interfere with crown or chronograph pushers on case. Also can be held in bench vise leaving both hands free to remove case back...will not slip. Knurled thumb screw, coil spring and strong guide pins hold jaws parallel. Precision machine finished.



No.	Dimensions	Price
16-927	2½"x1½"x1¼"	\$4.95



SPRING LOADED WATERPROOF CASE VISE

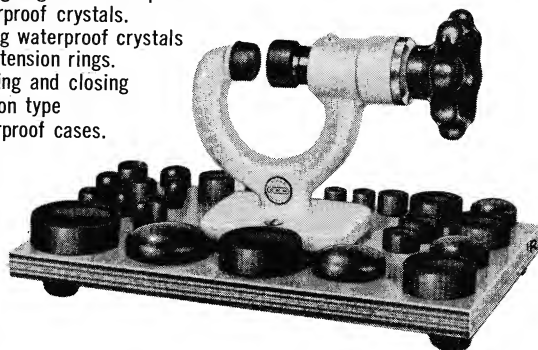
Has spring loaded jaws that hold cases tightly. Made of metal and fits in bench vise.

No.	Dimensions	Price
16-928	2½"x1½"x1¼"	\$2.95

KWM CRYSTAL PRESS

Comes complete with pushers and cups for:

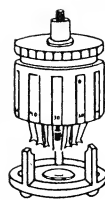
- Fitting regular round plastic waterproof crystals.
- Fitting waterproof crystals with tension rings.
- Opening and closing friction type waterproof cases.



You are in complete control of the pressure exerted by turning the large hand wheel. Both hands can be used to adjust the bezel and crystal so they can be aligned perfectly. Complete visibility is afforded due to horizontal design of the tool — no stooping or squinting to see position of crystal and bezel.

Press is mounted on wood base which is mounted on rubber feet. The base has 31 recesses to accept the set of 16 concave plastic cups; set of 5 convex rubber pushers; set of 9 special cups and 1 pusher for tension ring crystals which are supplied with press.

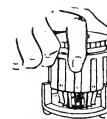
No.	Description	Set
17-905	Complete as described	\$33.95



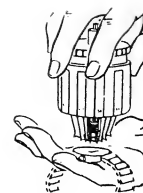
1. Put crystal in special base and select the height graduation (10-20-30-40-50).



2. Insert open jaws in base and push yellow button to center crystal.



3. Tighten knob, crystal will center automatically.



4. Insert crystal in to bezel and release knob.

INSERTER AND REMOVER FOR ROUND PLASTIC CRYSTALS

Here is a versatile tool that makes crystal changing an easy, foolproof job. It removes and inserts all sizes of round crystals, from small ladies (10mm) to large pocket watches. A special base enables you to center the crystal when tightening the jaws.

The jaws can be adjusted to grip the crystal at the height (5 graduations available) best suited to the particular crystal and bezel. In addition, the jaws can be used to scrape the bezel clean.

No.	Description	Set
17-904	Complete with instructions	\$13.95

PIN PUSHERS

For removing spring bars and push-pins from watch cases or strap buckles, etc.



Special design by K&D...one end is forked and other a pin for regular watches. Both ends are replaceable. Made of finest tempered steel with chrome handle.

No.	Length	Each
35-365	5 3/4"	\$1.60



0.90mm blade and 0.75mm pin for hard-to-get-at spring bars. Non-rolling K&D tool with friction chucks to hold the highly tempered blue steel blade and pin. Replacements are available.

No.	Length	Each
35-363	4 3/4"	\$1.10



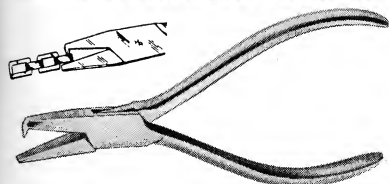
Has hardwood handle, chromed ferule and tempered steel blade. Can also be used to scratch designs on soft metals.

No.	Length	Each
35-362	5 3/8"	\$1.10



Economical all steel pin pusher with sharp point that can also be used to scratch initials or designs in soft metal.

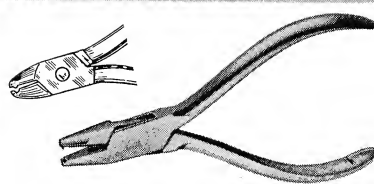
No.	Length	Each
35-354	3 7/8"	\$0.50



COMBINATION PENDANT POST AND BRACELET LINK PLIERS

For tightening or replacing pendant posts or for opening links on watch bracelets and chains. Prevents marring and bending.

No.	Length	Each
37-082	5"	\$3.95



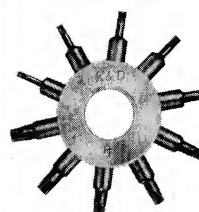
CASE BENDING PLIERS

For shaping the small depression in the edge of snap back cases, which hold the case shut. Makes cases close tight.

No.	Length	Each
37-086	5"	\$4.60

SLEEVE WRENCH

Fed. Stock No. 5120-329-3348



With ten bits for bracelet and pocket watches. Bits are carefully formed and electrically tempered for strength and toughness.

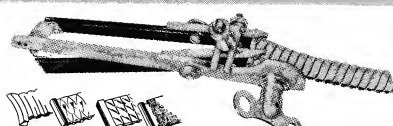
No.	Diameter	Each
49-545	2 1/4"	\$3.30



PRESTO CROWN & SNAP POST REMOVER

Removes crown and snap post from cases with this feature without damaging the case and tube. Can also be used to remove hands and setting knobs on alarm and desk clocks.

No.	Length	Each
39-419	3 3/4"	\$4.70

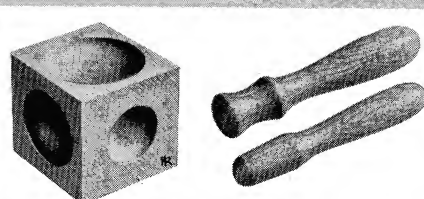


DYNA-SAW BAND CUTTER

Custom-sizes any watch band in one minute flat. Precision ground high speed saw cuts through stainless steel with ease and leaves a uniform factory finish on all shapes.

No.	Length	Each
40-133	6"	\$14.50

Replacement blades are available.



DENT REMOVER

Hardwood block and two pestles for removing dents and straightening cases and lockets. Block has cups of different sizes on each side.

No.	Dimensions	Set
19-301	2 1/4" Square	\$1.75

CASTING, AND CEMENTS

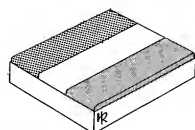
FILE-A-WAX

A wax like substance that can be sawed, filed, or carved. Used to make models of intricate jewelry patterns to be reproduced by the "Lost Wax" or "Investment Casting" process.

File-A-Wax will stand considerable rough handling, will not soften in the hands (melting point 250°F.), and is available in three degrees of hardness:

- **Green** — Cannot be flexed
- **Purple** — Some flexibility
- **Blue** — Will take a 90° bend on a piece 1/8" thick.

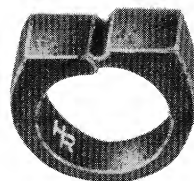
In addition to the kits shown above File-A-Wax can be purchased in 1/2 pound, 1 pound or 5 pound blocks ... please specify color.



MODELING BAR BLANKS

Introductory kit that contains a bar each of the three grades of File-A-Wax (3 1/2" x 1 1/4" x 1 1/4") for experimental purposes.

No.	Set
52-760	\$2.50



BLANKS FOR SIGNET RINGS

Contains 6 popular signet ring starting shapes that can be filed or carved into an original design.

No.	Set
52-763	\$4.95



BLANKS FOR STONE RINGS

Contains 6 popular stone ring starting shapes that can be filed or carved into an original design.

No.	Set
52-764	\$4.95



EXCELSAL

Transparent, invisible, heat and moisture proof, keeps dirt and moisture from penetrating watch cases. Can be used for all glass and plastic crystals, ivory, china, etc. In handy pin point dispensing tube.

No.	Description	Each
51-601	In dispensing tube	\$0.50



STRATENA

Transparent cement made especially for watch crystals. Also preferred for repairing glass, china, marble, ivory, bone, jewelry, etc.

No.	Size	Each
51-640	1/2 oz. bottle	\$0.40
51-643	Quart bottle	6.75



FUZIT

A transparent, quick drying cement for glass or unbreakable crystals. Invisible, dust proof and has great strength.

No.	Size	Each
51-610	1/2 oz. bottle	\$0.60



HOLDTITE

Stick cement for watch crystals. Will not flake, dry out or discolor dials. Used by heating bezel — applying cement in groove — putting crystal in place and allowing to cool.

No.	Size	Each
51-615	2 3/4" x 1/2"	\$0.50



SUC

For cementing and dustproofing unbreakable watch crystals including the new plastic types.

No.	Description	Each
51-645	In dispensing tube	\$0.50



KRYSTAL KLISTER

A new formula crystal cement which eliminates need for alcohol in removing excess cement. Excess cement comes off with water and rag. Can be used for glass or unbreakable crystals... has tremendous strength.

No.	Size	Each
51-648	1/2 oz. plastic dispenser	\$0.80

PEARL CEMENTS



FERRIS "NO-PEG" SUPREME

Simplified mixing because equal portions are used from the two tubes. Great strength eliminates use of pegs on pearls. Also good for mending glass, metal, china, mother-of-pearl, etc.

No.	Description	Set
51-630	Complete Kit	\$1.00



FERRIS "NO-PEG"

Original pearl cement which eliminated use of pegs. Kits complete with cement, hardener and directions for obtaining best results.

No.	Description	Set
51-631	Complete Kit	\$1.25
51-632	Hardener Refill	.45
51-634	Transparent Kit	1.50



FERRIS PEARL CEMENT REMOVER

Removes Ferris "No-Peg" and other types of Epoxy cements without harming pearl, gem stone, or metal. Contains no harmful acids or alkalis.

No.	Size	Each
51-654	4 oz. can	\$1.50
51-658	8 oz. can	2.50



PARLA KLISTER FORMULA #2

A pearl and jewelry cement with tremendous permanent strength. Pegs are not needed for pearls, and joints and catches can be cemented on jewelry. Equal portion from each tube are mixed just before using. Will withstand steaming or boiling.

No.	Description	Set
51-626	Complete Kit	\$1.00



PARLA KLISTER FORMULA #1

A pearl and jewelry cement that bonds with tremendous strength. No mixing required, however, will not stand boiling or steaming. Has stainless steel needle point dispenser.

No.	Size	Each
51-633	3/4 oz. plastic dispenser	\$1.00

SET

No.	Description	Set
51-627	Kit of Formulas 1 & 2	\$1.75



PEER STICK

A white pearl cement in stick form which is heated to apply.

No.	Each
51-629	\$0.80

MISCELLANEOUS CEMENTS



UHU GLUE

An all purpose adhesive, sets instantly, holds for keeps. Unaffected by heat, cold, steam, acids or oils.

No.	Size	Each
51-647	1 1/4 oz. tube	\$0.49



E-POX-E CEMENT

Has tremendous strength. Not affected by water, gasoline, naphtha, or any petroleum derivative. Withstands approximately 125-150°F. Kit of 2 tubes.

No.	Size	Set
51-652	1/2 oz.	\$1.00



SHREDDED JEWEL CEMENT

Fine strings of shellac, making it convenient for use in setting roller and pallet jewels as well as other uses.

No.	Each
51-637	\$0.50



SHELLAC STICKS

For setting jewels, stones, etc. Has many uses in a repair shop. Merely heat and apply.

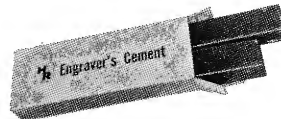
No.	Each
51-635	\$0.35



BLACK LATHE

Used to hold parts on cement brasses. Also used by stone setters, etc. Soluble in benzene or any watch cleaning solution. Comes in stick form.

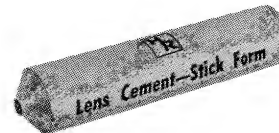
No.	Each
51-620	\$0.50



ENGRAVERS

For attaching objects to work holders during chasing, engraving, cutting or polishing. Melts easily. Two 1/2 lb. bars in a box.

No.	Style	Box
21-311	Dark	\$1.10
21-313	Light	1.10

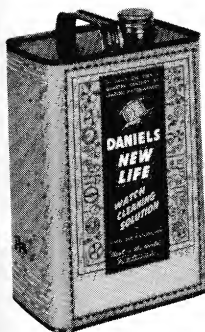


LENS CEMENT

For cementing bifocal, camera, binocular and other lenses. Requires no boiling and surplus is easily removed by alcohol. Stick form.

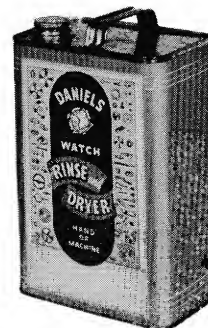
No.	Each
51-622	\$0.80

DANIELS NEW LIFE CLEANING SOLUTION



Non-flammable all purpose cleaner, without cyanide, that cleans so thoroughly parts regain their original lustre. Very economical, can be used for cleaning by hand or machine...for machine use, add an equal quantity of plain or distilled water.

No.	Size	Price
51-702	Quart can	\$1.00
51-704	Gallon can	3.50



DANIELS RINSE AND DRYER

Dries quickly and always "film free"...ideal for hand or machine use. Will not harm the more delicate parts. Non-explosive.

No.	Size	Price
51-712	Quart can	\$1.00
51-714	Gallon can	3.50



SUPERIOR HAIRSPRING CLEANER

An effective, non-inflammatory, solution for removing oil, grease, gummy substances, etc., from hairsprings, jewels and pallets. The HR Superior Hairspring Cleaner is non-corrosive, dries rapidly and completely. No. 51-728, 2 ounce size, has a wide mouth top so that the part can be dipped directly into the solution thereby eliminating the use of special liquid cups.

No.	Size	Each
51-728	2 oz. bottle	\$0.50
51-729	Pint bottle	2.75



CYANIDE

For cleaning jewelry, watch and clock movements, silverware, etc. Also used in plating solutions.

SODIUM CYANIDE (Eggs)

One egg in quart of water makes a good cleaning solution.

No.	Size	Each
51-722	1 lb. can	\$1.50

POTASSIUM CYANIDE (Granular)

Makes extra strong solutions.

No.	Size	Each
51-723	1 lb. can	\$2.35



DELTAH PEARL CLEANER

Here is a new superior pearl cleaner developed by Delta, the world's leading maker of simulated pearls. This safe, gentle, non-inflammatory product restores the original lustre to all pearls whether they are Cultured, Oriental or Simulated.

No.	Size	Each
51-720	6 oz.	\$0.90

CLEANERS AND SOLVENTS



HR RUST REMOVER

HR Rust Remover is non-acid, absolutely harmless to the polished finish of watch parts. In fact, a complete movement that has been immersed in water can be left in HR Rust Remover overnight. Parts and complete movements can be dipped directly in to the wide mouth bottle.

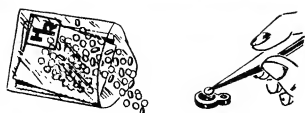
No.	Size	Each
51-777	4 oz. bottle	\$1.70



EUREMA

For removing tarnish from gold, silver, brass, etc. Just apply a small quantity to a soft cloth, wipe the article and then rinse in water. Serves also as an anti-oxidizer, pickle, and hard soldering solution.

No.	Size	Each
51-841	3 oz. bottle	\$0.65



JEWEL BRIGHTS

Small pieces of chamois for removing fingerprints, moisture, excess oil, etc., from movement plates and jewels. Kit contains 2 large squares and a gross of 1/8" discs.

No.	Description	Set
51-770	Complete Kit	\$1.00



PEGWOOD

Selected orangewood for cleaning pivot holes, etc. 6mm size has approximately eighteen 7" sticks; others have twenty-four 5 3/4" sticks.

No.	Diam.	Price
35-201	2mm	\$0.40
35-202	2 1/2mm	.40
35-203	3mm	.40
35-204	4mm	.40
35-206	6mm	.55



Schwerters

RUST REMOVER

Dissolves and removes rust from steel quickly. Small parts may be dipped in solution or it may be applied to surfaces of large pieces.

No.	Size	Each
51-775	1 oz. bottle	\$0.60



ACE SOLVENT

A liquid steel and iron solvent used to remove broken and rusty screws and stems from watch plates and crowns or other non-steel parts. Full directions on label.

No.	Size	Each
52-605	1 oz. bottle	\$0.50

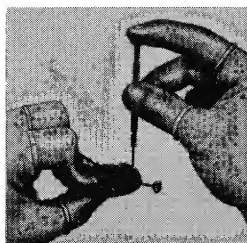


SAWDUST

Extra fine quality sifted hardwood sawdust for cleaning and drying jewelry, watch parts, etc.

No.	Size	Box
51-780	Quart Box	\$0.45
51-783	70 lb. Bag	—

FINGER COTS



Prevent contamination of surfaces and/or objects by finger oils and grime while retaining the delicate sense of touch needed in precision assembly. Made of amber Latex Rubber Tissue with green reinforced tips.

No.	Description	Dozen
51-771	Package of 1 Doz.	\$0.60

For one or more gross, please request quotation.



X3-100 RUST COMPOUND

- Removes rust
- Prevents return of rust
- Helps lubricate parts

Get rid of rust and prevent its return with one application.

No.	Size	Each
51-776	2 dram bottle	\$1.70



SOLVO

A steel and iron solvent in paste form. Used to remove broken or rusty screws from non-steel parts. Paste can be applied to steel parts on large plates avoiding necessity of immersing entire plate.

No.	Size	Each
52-608	1 oz. jar	\$0.45



SAWDUST SHAKER

Used for sifting sawdust when drying jewelry, watch parts, etc. Made of metal, it is approx. 4" high, with removable caps top and bottom.

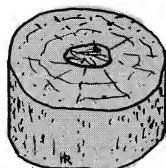
No.	Dia.	Each
40-281	2 1/4"	\$1.20



ANTI-RUST SOAP

Prevents rust caused by perspiration from your hands. Simply wash hands twice daily using this soap.

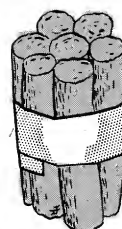
No.	Description	Each
52-771	Cake	\$0.90



FLORIDA PITH

Selected button pith for holding small delicate parts while brushing and cleaning. Also used to clean oilers. Each box contains 12 pieces.

No.	Diam.	Price
35-401	1"	\$0.50
35-402	1 1/8"	
35-402 1/2	1 3/8"	
35-403	Assorted	



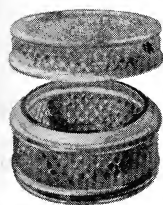
PITH STICKS

Fine quality pith for cleaning small parts. Bundle contains approximately 8 sticks, of various diameters averaging 3 1/2" in length.

No.	Type	Price
35-450	Soft	\$0.25
35-455	Hard	.35

ALCOHOL CUPS

For alcohol, benzene or cleaning solutions. Shoulders of covers and cups are ground so that they form a seal, keeping dust from entering and solutions from evaporation.



STANDARD CUP

Made of thick, cut glass. Outside diameter 2 7/8", height 1 7/8".

No.	Capacity	Each
18-101	1 1/2 oz.	\$1.55



CUP WITH KNOB

Made of thick clear glass. Outside diameter 3 1/4", height 2 3/4".

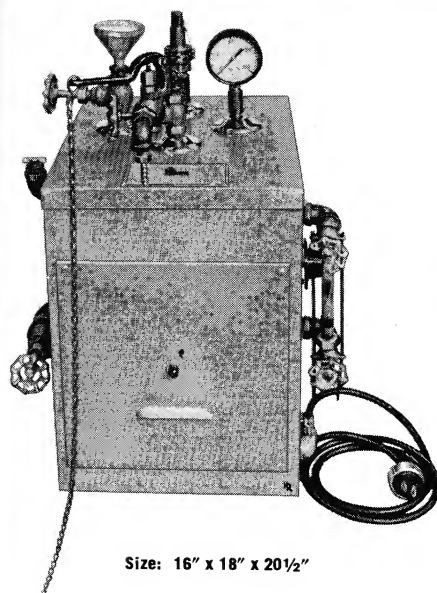
No.	Capacity	Each
18-103	3 1/2 oz.	\$1.65



SUPERIOR CUPS

Made of a thick, crystal clear glass, in various sizes. No. 18-105 is approx. 2" high. Nos. 18-105 1/2 and 106 2 3/4" high.

No.	Dia.	Cap.	Each
WITHOUT KNOB			
18-105	2 3/4"	3 oz.	\$1.95
18-105 1/2	4"	10 oz.	2.90
WITH KNOB			
18-106	4 1/4"	12 oz.	3.00



Mr. SUPERIOR

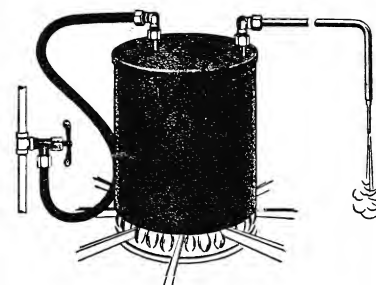
ELECTRIC "DRY STEAM" CLEANER

Dry steam evaporates... will not start corrosion. Cleans all metals, stones, felt displays, etc.

- Has 2 gallon water tank, 70 lb. pressure, and quick action foot operated steam lever for extra long cleaning time.
- Built and inspected to A.S.M.E. boiler standards, with all copper and brass fittings, pilot light, and on-off switch.
- Correct temperature is constantly maintained by a special Robertshaw Fulton Temperature Control that is far superior to an ordinary thermostat.
- Tank can be refilled while unit is still hot, but not operating. It can also be hooked-up to a water-line for semi-manual feed.
- Preset safety valve automatically releases excess steam.

Size: 16" x 18" x 20 1/2"

No.	Description	Each
17-202	110 Volt, 20 Amp line — Shipping Wt. 85 lbs.	\$239.95



STEAM JET JEWELRY CLEANING MACHINE

Clean your jewelry the factory way. The only method that removes dirt and grime from around diamonds and other stone set rings. Simple to use. Connect to a water pipe and set on a burner. Turn on the water, start the burner and in 30 seconds there is a jet of steam of 20 lbs. or more. Size only 6" x 6", complete with instructions.

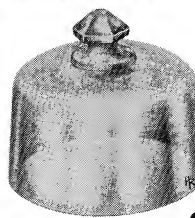
No.	Description	Each
17-201	With pipe valve	\$32.50



MOVEMENT COVERS

Used to protect disassembled watch movements and similar small parts from dust and dirt.

No.	Dia.	Each
17-403	3"	\$1.10
17-403 1/2	3 1/2"	1.30
17-404	4"	1.40
17-405	5"	1.50



MOVEMENT COVER AND TRAY

Keeps unassembled movements in order and protects them from dust.

No.	Dia.	Style	Price
18-372	4"	Wood and Glass	\$3.50
18-374	3 1/2"	All Plastic	2.50



NU-DIAL CLEANER

Cleans dials without removing numerals. Powder is picked up with wet finger and rubbed gently over dial.

No.	Description	Each
52-650	Small Box	\$0.35

WATCH TISSUES

Lint free, anti-tarnish for protecting watch parts, cleaning jewelry, etc. In boxes of 1,000 sheets.



Mr. NO LINT

A fine quality paper which has been RIBBED so that it separates one sheet at a time.

No.	Size	Box
53-053	3" x 3"	\$1.05
53-054	4 1/4" x 4 1/4"	1.20

PLAIN

No.	Mfg.	Size	Box
53-063	Rex	3" x 3"	\$0.80
53-073	Dennison	3" x 3"	1.45
53-064	Rex	4 1/4" x 4 1/4"	1.00
53-074	Dennison	4 1/4" x 4 1/4"	2.10



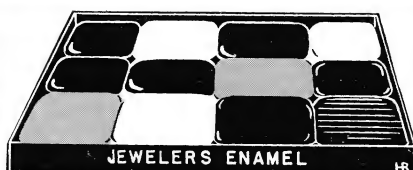
ANTI TARNISH BALLS & CAKES

Prevents silver, copper, nickel, etc. from tarnishing. Keeps stock attractive and saves polishing when kept in showcases and drawers.

No.	Description	Box
52-790	Box of 12 Balls	\$6.00
52-795	Box of 6 Cakes	1.38

X-REFERENCE: Brushes 12, Buffs 14, Plating 67, Polishing 80, Blowers 7.

COLORING ACCESSORIES AND CRUCIBLES



ENAMEL

Hard jewelers enamel supplied in sets of twelve assorted colors.

No.	Description	Set
52-783	Asst'd colors	\$1.50

DIAL ENAMEL



For repairing broken and chipped dials. Becomes pliable when warmed, so it can be pressed into broken part of dial. Can be

polished with burnisher. No. 52-632 contains 3 shades of white.

No.	Type	Each
52-620	Crushed	\$0.60
52-632	Caked	.80



Schwerters® SILVER OXIDIZER

For reproducing all shades from French gray to black on silver. Solution is brushed on and washed off when required color is obtained. Two ounces of concentrate makes 16 ounces when water is added.

No.	Size	Each
52-734	2 oz. bottle	\$0.60



Schwerters® SILVER PLATE

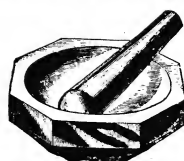
Contains pure silver, no mercury. Plates brass, copper or nickel without batteries.

No.	Size	Each
52-860	2 oz. bottle	\$0.80

BURNO CRUCIBLES

For melting gold quickly with the aid of a blowpipe...no furnace is needed. Gold melts faster in this type of crucible. Made of fire brick that lasts through many heatings and coolings.

No.	Capacity	Size	Each
17-701	100 dwt	3 1/8" x 2 1/2" x 3"	\$1.75
17-702	50 dwt	2 1/2" x 1 7/8" x 2 1/4"	1.40
17-703	25 dwt	2 3/8" x 1 1/2" x 2"	1.20



MORTAR AND PESTLE

For crushing jewelers enamel into fine powder prior to firing or melting. Made of selected agate and highly polished. Pestle included.

No.	Diameter	Set
33-591	1 1/2"	\$11.85



TRU-BLU COLORING SET

For coloring or refinishing watch or clock hands. Apply with soft brush or cloth. Dries instantly. Available in six colors: Blue, Black, White, Red, Purple, Gold.

No.	Color	Each
52-708	Specify	\$0.40

Specify Order No. and Color when ordering.

SET

No.	Description	Set
52-700	All 6 Colors	\$1.70



COERULINE

Removes blue temper color from steel, leaving it bright. Often used on blue watch hands when silver ones are needed. Also on staffs and stems after being tempered.

No.	Size	Each
52-730	1 oz. bottle	\$0.40



Schwerters® GILT PLATE

For gilding solder after working on gold or gold filled article. Used without batteries.

No.	Size	Each
52-863	2 oz. bottle	\$0.70

LUMINOUS COMPOUNDS

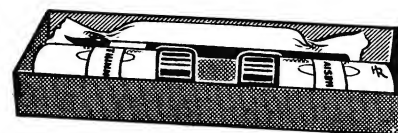
Contain no radium...for retouching and refinishing dials and hands.



IN TUBES

Easy to apply...pin point opening allows application directly from tube.

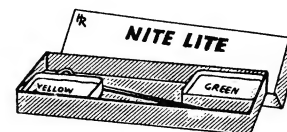
No.	Color	Each
52-941	Green	\$1.25
52-951	Yellow	1.25



Nite Lite MIXING KIT

Contains powder, adhesive, thinner and brush to apply compound to dials or hands.

No.	Color	Set
52-977	Yellow	\$1.25



Nite Lite CAKES

Requires no mixing...dries instantly. Compound applied with heated spatula to hands or dials.

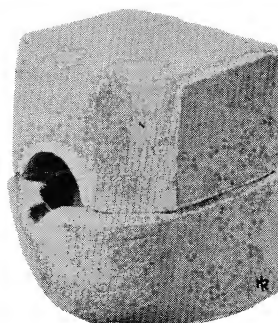
No.	Color	Set
52-970	Yellow and Green	\$1.25



Nite Lite LIQUID

Ready to use...apply with brush to dial or hands.

No.	Color	Each
52-985	Green	\$0.95



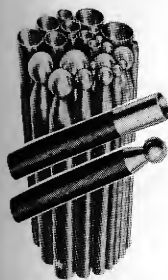
Nos. 17-821/822 Oliver

No. 17-811 Dica

CRUCIBLE TONGS

Made of sturdy metal for holding and/or lifting various shaped crucibles.

No.	O. L.	Each
17-811	10 1/2"	\$0.50
17-821	12"	3.65
17-822	17"	3.65

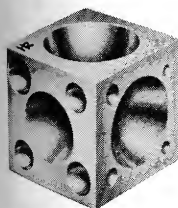


STEEL DAPPING PUNCHES AND CUTTERS

Used with dapping dies for shaping, working and cutting metals and making hemispheres. Made of high grade steel, perfectly tempered. Sold in sets of various sizes.

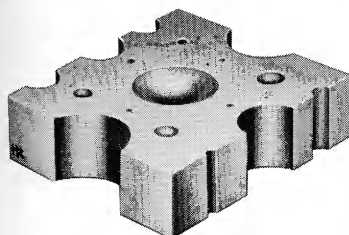
No.	Description	Set
ASSORTMENTS		
19-012	6 ea. Punches & Cutters	\$4.40
19-018	9 ea. Punches & Cutters	7.20
19-025	12 ea. Punches & Cutters	10.45
19-036	18 ea. Punches & Cutters	16.65
PUNCHES ONLY		
19-112	12 Pieces	4.40
19-118	18 Pieces	7.20
19-124	24 Pieces	10.45
19-136	36 Pieces	16.65

DAPPING DIES



Used with punches and cutters to make balls, shells, and similar metal shapes. Square shaped die has six working surfaces with a large number of depressions varying in depth and diameter.

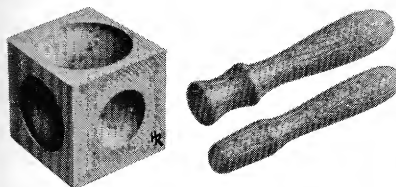
No.	Metal	Size	Each
19-150	Steel	2"	\$19.00
19-150B	Brass	2"	20.00
19-165	Steel	2 1/2"	25.00



STEEL DESIGN BLOCK

For shaping rings, their stone settings, bezels, shells, balls, etc. Made of a high grade steel, it has six working surfaces.

No.	Size	Each
19-341	3" x 2" x 3/4"	\$8.25



DENT REMOVER

Hardwood block and two pestles for removing dents and straightening cases and lockets. Block has cups of different sizes on each side.

No.	Dimensions	Set
19-301	2 1/4" Square	\$1.75



DELUXE DEMAGNETIZER

Demagnetizes instantly with the press of a button. In just a fraction of a second any watch, small tool, or component is safely and completely demagnetized. Pilot light flashes indicating charge has been released.

In the HR Deluxe Demagnetizer, there are no moving parts. Even though it is 18 times stronger than ordinary demagnetizers, this model cannot overheat or burn out, even if left plugged in continuously.

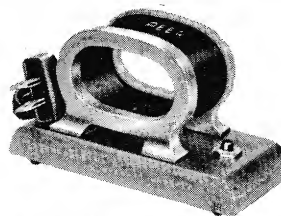
No.	Description	Each
19-230	115 volt 60 cycle AC	\$29.95



K&D DEMAGNETIZER

Demagnetizes by slowly withdrawing part from center of coil to a distance of 2 feet while pressing button. Has Var coil with nickeloid cover. Operates on 110V AC Current.

No.	Size	Each
19-202	3 1/8" x 2 1/8" x 2 3/4"	\$6.00



PEERLESS DEMAGNETIZER

Demagnetizes as object is slowly moved away. Sturdy, efficient, dependable. Coil is mounted on a polished hardwood base. Operates on 115V 60 cycle AC current.

No.	Size	Each
19-251	5 1/8" x 2 3/4" x 3 1/8"	\$9.00



DEMAGNETIZER

Demagnetizes as object is slowly moved away. Economical, with coil mounted on hardwood base and contact button. Current: 110V AC.

No.	Size	Each
19-260	5 3/8" x 2 3/8" x 3"	\$5.50



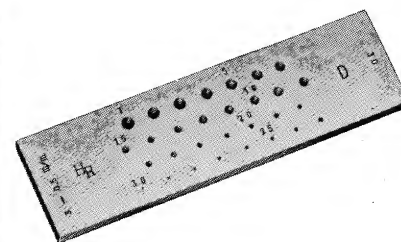
COMPASSES

For detecting presence of magnetic field in tools, parts and components. Extremely sensitive.

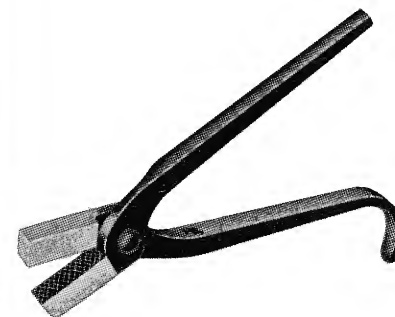
No.	Type	Dia.	Each
17-301	Plain	3/8"	\$0.20
17-306	Jeweled	1/4"	.75
17-312	Jeweled	1/2"	.75

JOUBERT DRAWPLATES

For reducing the diameter and shape of Gold, Silver, Platinum, Copper, Brass, Wire, etc.



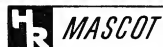
No.	Letter on Plate	No. of Holes	Small Hole In mm	Large Hole In mm	Each
ROUND HOLES					
19-601	A	20	0.4	1.0	\$7.25
19-602	AA	20	0.6	1.5	7.25
19-605	AX	20	0.3	0.65	7.25
19-606	AZ	20	0.4	1.3	7.25
19-608	B	20	0.5	2.0	7.25
19-609	BB	20	0.8	3.0	7.25
19-612	C	20	1.5	3.5	8.50
19-615	D	30	0.5	3.0	11.00
19-616	DA	30	0.8	3.5	11.00
19-618	DX	30	0.5	2.5	11.00
19-619	E	30	1.0	4.0	11.00
19-620	F	40	0.3	3.5	16.50
19-621	FA	40	0.5	4.0	16.50
19-625	G	40	0.8	4.5	16.50
19-626	H	40	1.5	5.5	19.50
19-627	I	40	2.5	6.5	19.50
19-628	J	60	0.5	6.5	27.00
19-629	JA	60	1.0	7.0	31.00
HALF ROUND HOLES					
19-638	K	30	1.0	4.5	21.00
19-640	KA	20	1.0	4.0	17.00
19-641	KB	20	2.5	6.0	17.00
19-645	M	40	1.5	6.0	27.00
SQUARE HOLES					
19-658	O	20	1.0	3.0	8.00
19-657	OX	20	0.5	2.5	8.00
19-659	P	20	2.0	4.0	8.00
19-661	Q	30	1.0	4.0	13.00
19-660	QQ	20	0.25	2.0	8.00
19-662	R	30	2.0	5.0	14.00
OVAL HOLES					
19-690	W	20	1.5	4.0	11.50
19-692	WB	30	1.5	5.5	20.00
KNIFE					
19-694	Y	20	1.0	3.5	11.50
19-695	YA	30	1.0	5.0	20.00
ASSORTED HOLES (Round, Half Round, Square)					
19-670	U	60	Various		37.50
19-671	V	51	Various		27.00



DRAWTONGS

For pulling wire through drawplates. Strong serrated jaws provide a good gripping surface. Made of forged steel.

No.	Jaws		O. L.	Each
	Length	Width		
19-718	1"	3/4"	8"	\$7.00
19-719	1 1/4"	7/8"	10"	8.75



DRILLS

Made of high grade steels, properly tempered, ground and finished. Guaranteed to be perfectly centered and accurately sized. Cut cleanly and rapidly... long life, constant quality.



Straight Shank Twist Drills—Either High Speed or Carbon Steel. With proper concentricity of the chisel edge, and correct point and clearance angles.



High Speed Spiral Pivot—Right hand, fast helix type with positive rake angle. For drilling through tool steel, stainless steel, etc.



High Speed and Carbon Steel Flat Pivot—Right hand drills with a rake angle of zero degrees. For drilling brass, mild steel, aluminum, etc.

Specify Order No. and Size (either Drill No. or Diameter), when ordering... prices are per dozen. Minimum Order quantity on Pivot Drills is a dozen of a size.

Drill No.	Diameters		Twist Drills		Pivot Drills	
	Inch	Millimeter	20-100 Carbon Steel	20-104 High Speed	20-123 High S. Spiral	20-400 Carbon Flat
—	.003"	0.076mm	—	—	—	\$8.76
—	.004"	0.102mm	—	—	\$5.52	\$1.40
—	.005"	0.127mm	—	—	5.52	1.40
97	.0059"	0.150mm	—	\$16.20	—	—
—	.006"	0.152mm	—	—	5.52	1.40
96	.0063"	0.160mm	—	15.00	—	—
95	.0067"	0.170mm	—	15.00	—	—
—	.007"	0.178mm	—	—	5.52	1.40
94	.0071"	0.180mm	—	13.20	—	—
93	.0075"	0.190mm	—	13.20	—	—
92	.0079"	0.200mm	—	13.20	—	—
—	.008"	0.203mm	—	—	5.52	1.40
91	.0083"	0.210mm	—	11.52	—	—
90	.0087"	0.220mm	—	11.52	—	—
—	.009"	0.229mm	—	—	5.28	1.40
89	.0091"	0.230mm	—	11.52	—	—
88	.0095"	0.241mm	—	11.52	—	—
87	.010"	0.254mm	—	9.60	5.28	1.40
86	.0105"	0.267mm	—	9.60	—	—
85	.011"	0.279mm	—	8.04	5.28	1.40
84	.0115"	0.292mm	—	8.04	—	—
83	.012"	0.305mm	—	8.04	5.28	1.40
82	.0125"	0.320mm	—	6.84	—	—
81	.013"	0.330mm	—	6.84	5.28	1.40
80	.0135"	0.343mm	\$2.00	3.60	5.28	—
—	.014"	0.355mm	—	—	5.28	1.40
79	.0145"	0.369mm	2.00	3.60	5.28	—
—	.015"	0.381mm	—	—	5.28	1.40
78	.016"	0.406mm	2.00	3.60	5.28	1.40
—	.017"	0.432mm	—	—	5.28	1.40
77	.018"	0.457mm	2.00	3.60	5.28	1.40
—	.019"	0.482mm	—	—	5.28	1.40
76	.020"	0.508mm	2.00	3.60	5.28	1.40
75	.021"	0.533mm	2.00	3.60	5.28	1.40
—	.022"	0.559mm	—	—	5.28	1.40
74	.0225"	0.572mm	2.00	3.60	5.28	—
—	.023"	0.584mm	—	—	5.28	1.40
73	.024"	0.610mm	2.00	3.60	5.28	1.40
72	.025"	0.635mm	2.00	3.60	5.28	1.40
71	.026"	0.660mm	2.00	3.60	4.68	1.40
—	.027"	0.686mm	—	—	4.68	—
70	.028"	0.712mm	2.00	2.40	4.68	1.40
—	.029"	0.737mm	—	—	4.68	—
69	.0292"	0.743mm	2.00	2.40	4.68	—
—	.030"	0.762mm	—	—	4.68	1.40
68	.031"	0.787mm	2.00	2.40	4.68	—
67	.032"	0.813mm	2.00	2.40	4.68	1.40

ADDITIONAL SPECIFICATIONS FOR PIVOT DRILLS

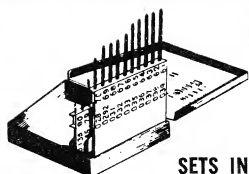
High Speed Spiral & Flat—Flute length is 7 times the diameter. Shank diameters of sizes .003" to .031" is 1.0mm; shank diameters of sizes .032" to .052" is 1.5mm.

Drill No.	Diameters		Twist Drills		Pivot Drills	
	Inch	Millimeter	20-100 Carbon Steel	20-104 High Speed	20-123 High S. Spiral	20-400 Carbon Flat
66	.033"	0.838mm	—	—	4.68	—
—	.034"	0.864mm	—	—	4.68	1.40
65	.035"	0.889mm	2.00	2.40	4.68	—
64	.036"	0.914mm	2.00	2.40	4.68	1.40
63	.037"	0.940mm	2.00	2.40	4.68	—
62	.038"	0.965mm	2.00	2.40	4.68	1.40
61	.039"	0.991mm	2.00	2.40	4.68	—
60	.040"	1.016mm	2.00	2.40	5.76	1.40
59	.041"	1.041mm	2.00	2.40	5.76	—
58	.042"	1.067mm	2.00	2.40	5.76	1.40
57	.043"	1.092mm	2.00	2.40	5.76	—
—	.044"	1.117mm	—	—	5.76	1.40
—	.045"	1.143mm	—	—	5.76	—
—	.046"	1.168mm	—	—	5.76	1.40
56	.0465"	1.181mm	2.00	2.40	5.76	—
—	.047"	1.194mm	—	—	5.76	—
—	.048"	1.219mm	—	—	5.76	1.40
—	.049"	1.245mm	—	—	5.76	—
—	.050"	1.270mm	—	—	5.76	1.40
—	.051"	1.295mm	—	—	5.76	—
55	.052"	1.321mm	2.00	2.40	5.76	—
54	.055"	1.397mm	2.00	2.40	—	—
53	.0595"	1.512mm	2.00	2.40	—	—
52	.0635"	1.613mm	2.00	2.40	—	—
51	.067"	1.702mm	2.00	2.40	—	—
50	.070"	1.778mm	2.00	2.40	—	—
49	.073"	1.854mm	2.00	—	—	—
48	.076"	1.930mm	2.00	—	—	—
47	.0785"	1.994mm	2.00	—	—	—
46	.081"	2.057mm	2.00	—	—	—
45	.082"	2.083mm	2.00	—	—	—
44	.086"	2.184mm	2.00	—	—	—
43	.089"	2.261mm	2.00	—	—	—
42	.0935"	2.378mm	2.00	—	—	—
41	.096"	2.438mm	2.00	—	—	—
40	.098"	2.489mm	2.00	—	—	—
39	.0995"	2.528mm	2.00	—	—	—
38	.1015"	2.578mm	2.00	—	—	—
37	.104"	2.642mm	2.00	—	—	—
36	.1065"	2.705mm	2.00	—	—	—
35	.110"	2.794mm	2.00	—	—	—
34	.111"	2.819mm	2.00	—	—	—
33	.113"	2.870mm	2.00	—	—	—
32	.116"	2.946mm	2.00	—	—	—
31	.120"	3.048mm	2.00	—	—	—
30	.1285"	3.264mm	2.00	—	—	—

Carbon Steel Flat—Shank diameters of sizes .004" to .026" is 0.8mm; shank diameters of sizes .028" to .050" is 1.5mm.

The millimeter shank diameters indicate the size of standard "WW" Collets to use in the drill press head... see Page 29 this catalog.

TWIST DRILL ASSORTMENTS



SETS IN METAL CASES

Sets of 20, sizes 61 to 80, in metal cases that are indexed with the drill number and its decimal equivalent.

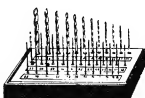
No.	Type	Set
20-088	Carbon Steel	\$5.25
20-094	High Speed Steel	6.95



SET IN PLASTIC STAND

Set of 20, sizes 61 to 80, in an indexed plastic stand with a clear plastic cover.

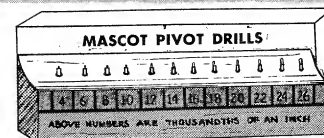
No.	Type	Set
20-089	Carbon Steel	\$5.25



SET IN WOOD STAND

A set of 36, sizes 33 to 80, in an indexed wood stand with a cardboard cover.

No.	Type	Set
20-087	Carbon Steel	\$8.25



PIVOT DRILL ASSORTMENTS

Sets of Carbon Steel Flat drills mounted in a wood block, marked with the sizes, and protected by a clear plastic cover. Assortments contain 1 dozen drills.

No.	Sizes (even number only)	Set
20-410	3 each .004" to .010"	\$1.40
20-426	1 each .004" to .026"	
20-550	1 each .028" to .050"	

DRILL CHUCKS

For sensitive, precision drilling. All chucks are carefully made so that the drills run true and provide even cutting.



KEY

A regular Jacobs styles key chuck that fits collet adapter on micro drill press No. 20-701. Has #0 taper hole, and is recommended for drill sizes .0135" to $\frac{1}{32}$ ".

No.	Capacity	Each
31-392	$\frac{3}{32}$ "	\$8.80



KEYLESS

A regular Albrecht keyless chuck to fit collet adapter on precision lathes and micro drill presses. Has #0 taper hole, and is recommended for drill sizes .008" to $\frac{1}{16}$ ".

No.	Capacity	Each
31-395	$\frac{1}{16}$ "	\$16.50



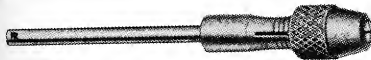
COLLETS

Standard "WW" Wire Chucks for use with pivot drills. Made of the best hardened steel that has been ground and tapered to assure perfection in size and true-ness while running.

No.	Description	Capacity	Each
31-540	Collet No. 8	0.8mm	\$3.25
	Collet No. 10	1.0mm	
	Collet No. 15	1.5mm	

Specify Order No. and Collet No. when ordering.

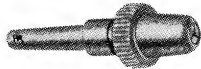
X-REFERENCE—See Page 57 for additional Wire Chucks (Collets).



ADAPTOR

Handy for holding drills and other small tools. Fits a No. 24 Wire Chuck and Flexible Shaft handpieces.

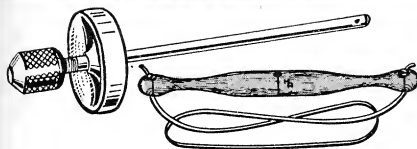
No.	Capacity	Each
31-240	1.15mm	\$0.75
31-241	2.50mm	1.00
31-242	2.90mm	1.10



PIVOT AND TWIST DRILL

Back taper fits into taper chuck or in regular tailstock spindle. Designed to hold pivot drills and very small twist drills.

No.	Style	Capacity	Each
31-410	"WW"	0.90mm	\$4.00
31-411	Moseley	0.90mm	4.00



PUMP DRILL

Hand drill for use with clock, pearl setting, and wire twist drills. Made of hardwood, except for metal screw chuck, and operated by making the leather strap twine around the center rod.

No.	Each
20-705	\$4.25

SENSITIVE DRILL PRESS

With down feeding spindle for accurate, precise micro-drilling and sensitive feel of the cutting action.

A precision machine designed to keep drills true and provide even cutting at diameters as small as .003". Its down feeding head working in conjunction with a stationary work table permits micro-drilling under magnification without constant focusing adjustments.

SPECIFICATIONS

Overall Size—6" wide, 13 $\frac{1}{8}$ " deep, 13 $\frac{1}{2}$ " high.

Column—12" high, 1.360" diameter.

Weight—Approximately 32 lbs.

Max. Working Height—Base to spindle 8 $\frac{1}{2}$ ".

Max. Depth—Center line of spindle to edge of column 3".

Max. Spindle Feed—.810".

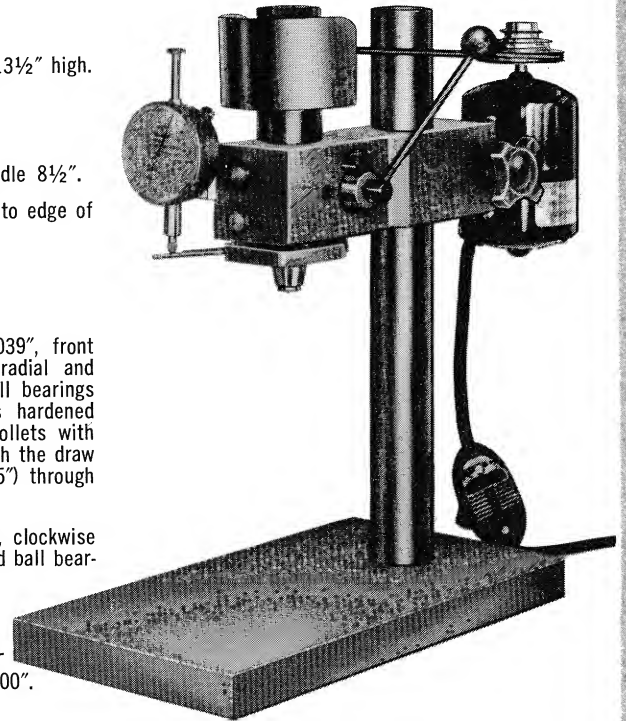
Drilling Capacity—.003" to .157".

Spindle—Cartridge type, T.I.R. .00039", front row roller bearings. Double row radial and thrust ball bearings in the rear. All bearings are instrument quality. Spindle is hardened and round to take standard WW collets with draw bar. The hole clearance through the draw bar is 4mm (.1574") or 8mm (.3125") through the spindle without the draw bar.

Motor—Dayton, 1/15hp, 5000 RPM, clockwise rotation .312" shaft diameter. Sealed ball bearing housing.

Feed Control—Rack and pinion.

Dial Indicator—Reads counterclockwise. For depths from .001" to 1.000".



EQUIPPED AS FOLLOWS:

Base, Column, Drill Press Head and Spindle (to take standard WW collets), Motor and Pulleys, Feed Pinion, Dial Indicator and Bracket. Collet Chuck Adapter (WW standard to fit Jacobs Style "O" (0 to $\frac{1}{32}$ ") or Albrecht Style "JO" (0 to $\frac{1}{16}$ ").

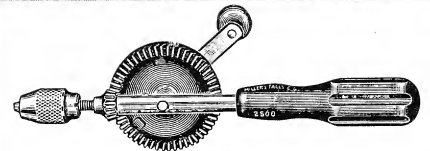
No.	Description	Each
20-701	Complete as described	\$250.00



SPIRAL DRILL

Archimedean type hand drill for use with very small drills. Operated by pushing serrated center hand piece up and down. Length 4".

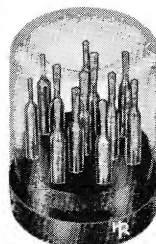
No.	Capacity	Price
20-703	0 to 1.0mm	\$1.40



HAND DRILL

For use with clock, pearl setting, and wire twist drills. Has solid steel frame with hardwood handle and machine cut gear teeth for dependable service. 3-jawed screw chuck has a capacity of 0 to $\frac{1}{4}$ ".

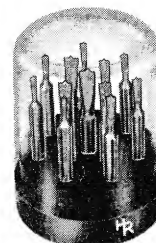
No.	O.L.	Each
20-744	11"	\$4.95



CLOCK DRILLS

For drilling face plates of clocks and similar metal. Made of carbon steel and packaged in a plastic stand with cover. 12 sizes: 1.05mm to 2.05mm.

No.	Description	Set
20-382	Set of 12	\$4.25



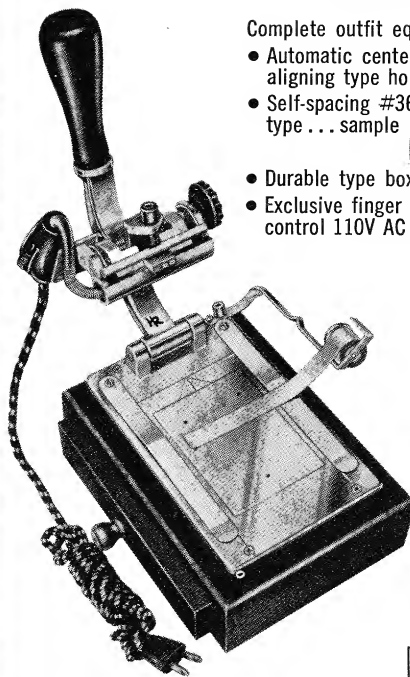
PEARL SETTING DRILLS

Used to make settings for seed pearls. Made of carbon steel and packaged in a plastic stand with cover. 12 sizes: 1.05mm to 3.00mm.

No.	Description	Set
20-383	Set of 12	\$4.25

THE FRANKLIN "REGAL" SIGNET EMBOSSER

Finalizes sales and prevents exchanges by personalizing small leather goods, etc.



- Complete outfit equipped with:
- Automatic centering and aligning type holder
 - Self-spacing #3692 Dura Cast type... sample **LCW**
 - Durable type box
 - Exclusive finger tip heat control 110V AC or DC
 - 25 foot roll 23Kt Dura Gold Leaf
 - Manual roll feed
 - Mounted on Cabinet with drawer for type
 - Flannel for finishing
 - Pieces of leather for practicing
 - Tweezers for handling type
 - Complete set of instructions

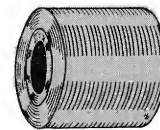
No.	Description	Set
38-432	Complete as described	\$59.75



FRATERNAL EMBLEMS

Set of 14 dies for embossing fraternal emblems.

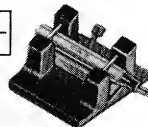
No.	Description	Set
38-466	Set of 14	\$9.00



PRINTING MACHINE ROLLS

Available in 23Kt Dura Gold Leaf or Aluminum Leaf.

No.	Type	Size	Each
38-460	Gold	25' long, 1" wide	\$2.00
38-465	Aluminum	100' long, 3/4" wide	.75



FOUNTAIN PEN ATTACHMENT

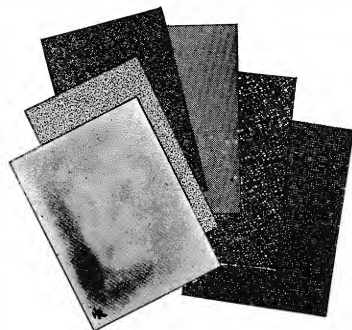
For holding fountain pens to be stamped. Uses No. 38-445 type (see below).

No.	Description	Each
38-438	Without Type	\$8.25

SETS OF DURA CAST TYPE

No.	Sample	Set
38-440	O H G	\$6.00
38-441	THOMAS F. GRAY	7.50
38-445		7.50
38-446	ARTHUR K. GAINLEY	6.00
38-447	ROBERT B. WINSLOW	9.00
38-449	Mr. and Mrs. John B. Randall	12.00

The "Super Regal" is also available with attachments for stamping stationery, matchbooks, napkins, etc. Ask for circular. Price \$114.75.



X-REFERENCE: Emery Sticks, Page 14

EMERY PAPER & CLOTH

For smoothing, polishing and finishing. Specify grit with Order No.

BEHR MANNING PAPER

Available in grits 4/0 (fine) 3/0, 2/0, 0, 1, 1G, 2 and 3 (coarse). Size 9" x 13 3/4".

No.	Grit	Dozen
21-021	Specify	\$1.85

HUBERT FRENCH PAPER

Available in grits 5/0 (fine), 4/0, 3/0, 2/0, 0, 1, 1G, 2, 3, and 4 (coarse). Size 8 1/2" x 13 1/4".

No.	Grit	Dozen
21-041	Specify	\$1.65

EMERY CLOTH

Finest quality emery cloth in sheets, size 9" x 11". Available in grits 4/0 (very fine), fine, medium, coarse, very coarse.

No.	Grit	Dozen
21-010	4/0	\$2.80
	Fine	1.80
	Medium	1.90
	Coarse	2.20
	Very Coarse	2.40

Specify Order No. and Grit, when ordering.

CROCUS CLOTH

No.	Size	Dozen
21-011	9" x 11"	\$1.80

ROUGE PAPER

No.	Grit	Dozen
21-043	Extra Fine	\$1.65

TRACERS AND SCRIBERS

For marking and/or tracing on a variety of surfaces: various steels, glass, jewels, plastic, etc.



STEEL TRACER

Double end, with twisted center to provide firm grip. Polished points.

No.	Length	Each
21-448	7"	\$1.10



STEEL TRACER

Double end, with knurled center to provide firm grip. Polished points.

No.	Length	Each
21-452	4 1/4"	\$0.40



DUPLEX TRACER AND RULE

One point is rubber to layout designs without scratching; other point polished steel. Flexible steel rule included.

No.	Length	Set
21-454	4 3/4"	\$1.05



MICRO-SCRIBER

Has solid carbide tip and aluminum hexagonal handle that will not roll.

No.	Length	Each
21-456	5 1/4"	\$1.50



WALLER SCRIBERS

Have solid carbide tips. End is reversible and can be screwed in handle. No. 21-458 has a magnet in the handle.

No.	Type	Length	Each
21-457	Non-Magnetic	4 1/4"	\$1.25
21-458	Magnetic	4 1/4"	1.65



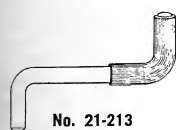
K&D SCRIBER

Has screw chuck and non-roll handle. Point can be reversed and inserted in handle.

No.	Length	Each
21-465	4 3/4"	\$1.15

ENGRAVING BLOCK ATTACHMENTS

Designed to hold a wide variety of items on engraving block.



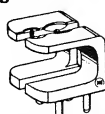
No. 21-213
Bent pins
Set \$3.00



No. 21-203
Rubber covered
Set \$1.70



No. 21-211
Watch Holders
Set \$3.00



No. 21-208
Button holders
Set \$4.50



No. 21-202
Rubber covered pins
Set \$1.70



No. 21-205
Concave pins
Set \$1.70



No. 21-210
Locket Holders
Set \$3.00

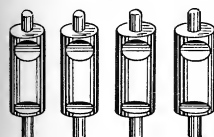


No. 21-206
Taper pins
Set \$1.70



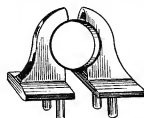
No. 21-209
Triangular pins
Set \$3.00

All above come in sets of four except No. 21-208 which is a set of two.



VICTOR 4-IN-1
These 4 pins will do the work of many attachments.

No.	Set
21-241	\$4.00



RING HOLDER
Hold rings so they can be engraved on inside.

No.	Set
21-245	\$2.75

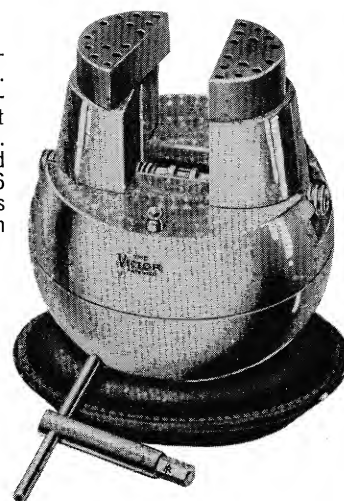
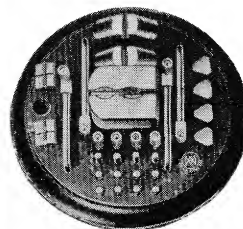


BUTTON HOLDER
Set of 4 button holders for engraving block.

No.	Set
21-214	\$3.00

THE VICTOR ENGRAVING BLOCK

Recognized as standard among engravers throughout the world. Turntable revolves on Victor bearings, eliminating side shake, yet responsive to the slightest touch. Wide work holding capacity and deep throated jaws. Weight is 16 pounds and spherical diameter is 5 inches. Comes complete with attachments.



No.	Description	Set
21-200	Engraving Block with Felt Pad	\$75.00
21-201	Engraving Block with Leather Pad	78.75
21-215	Set of Attachments	12.55

PRACTICE PLATES AND RINGS

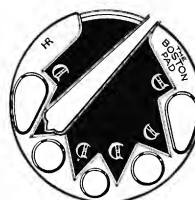
With surfaces that are easily worked by any type of graver. Plates may be used for cards and rings are sold in sets of 12.



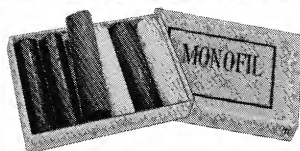
No.	Metal	Size	Price
PLATES			
21-390	Copper	2" x 3 1/2"	\$1.00 ea.
21-391	Copper	2 3/8" x 3 3/4"	1.30 ea.
21-395	Copper Tinned	2" x 3 1/2"	4.20 doz.
RINGS			
21-397	Brass	—	3.00 doz.

BOSTON TRANSFER PADS

Simplifies transferring of engraved design to many articles. The numerous angles of the guide permit a number of position (spoon handle shown on illustration). Both sides of pad may be used. Full directions included.



No.	Description	Each
21-426	Complete Pad	\$3.60
21-427	Gelatine Refills	1.20



MONOFIL

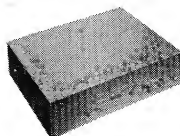
Prepared crayon for filling-in engraved patterns, initials, etc., then burnished to provide a two-tone effect. Six sticks per box.

ASSORTMENT

No.	Description	Box of 6
21-431	Colors 21-430A to 430F	\$1.20

INDIVIDUAL COLORS

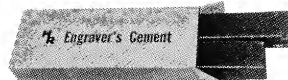
No.	Color	Price
21-430A	Black	\$0.40 per stick 1.20 box of 6
21-430B	Blue	
21-430C	Green	
21-430D	Red	
21-430E	White	
21-430F	Yellow	.75 per stick 3.25 box of 6
21-432G	Gold	
21-432S	Silver	



BOXWOOD

Used by wood engravers; also as a polishing block for gravers, steel markers, etc.; and as a practice block for monograms, patterns, etc. Can be rubbed down and used over again.

No.	Size	Each
21-350	3" x 2" x 3/4"	\$0.70
21-352	4" x 3" x 1"	1.40



CEMENT

Used to attach objects to work holders (such as boxwood slips) for chasing or engraving. Also used to hold semi-precious stones on sticks while cutting and polishing. Melts easily. Two 1/2 lb. bars in box.

No.	Color	Box
21-311	Dark	\$1.10
21-313	Light	1.10



CHINESE WHITE

When brushed on, makes a surface that accepts pencil or carbon paper impressions.

No.	Size	Each
21-316	Small	\$0.85
21-317	Large	1.25



TRANSFER WAX

For transferring engraved designs from one article to another, or as base for marking designs.

No.	Each
21-535	\$0.75



SUN BLEACHED BEES WAX

Used as a base for marking designs and on saw-blades to facilitate cutting.

No.	Description	Each
21-322	Disp. Tube	\$0.35

FELT RING PAD



Provides a rest for large bowls, etc., and is a replacement holder for the engraving block.

No.	Dia.	Each
21-421	5"	\$5.85

SOLID PADS



Leather covered pad provides a base for holding large objects that will not fit in the engraving block. Also useful as an elbow rest while engraving.

No.	Dia.	Each
21-404	4"	\$6.45
21-405	5"	6.75
21-406	6"	7.50
21-407	7"	8.25

RING PADS



Leather covered pad provides a rest for large bowls, etc. Also can be used as a rest for the engraving block.

No.	Dia.	Each
21-414	4"	\$6.45
21-415	5"	7.50
21-416	6"	8.25
21-417	7"	9.00

EYE GLASSES

Provide a minimum of eye strain during prolonged close-up inspection and assembly. Lightweight, proven design, in a wide range of powers and styles.

Headspring Models—For those not accustomed to holding loupe in eye without assistance. The lightweight steel headband will not bind and can be adjusted to fit the individual.

Spectacle Loupes—For those who wear glasses. Models fit either eye and swing up out of the way when not in use.

Ray Ban—Are loupes with green tinted lenses that reduce glare from polished surfaces.

3-Dimensional Magnifiers—Headband units that provide depth perception, allow more light, decrease shadows and permit greater working distances.



LOUPE HOLDER

Spring metal clip attaches to eye loupes so that it can be worn on spectacles.

No.	Price
22-961	\$0.25



Single Lens



Double Lens



Pivot



Triple Aplanatic

B&L EYE LOUPES

Feather light frames with soft black interior surface to reduce glare. Lenses are carefully ground and polished from the best optical glass.

WITHOUT HEADSPRING

No.	Working Distance	Power	Price
22-301	1"	10X	\$2.75
22-301½	1½"	7X	2.25
22-302	2"	5X	1.75
22-302½	2½"	4X	1.75
22-303	3"	3.3X	1.75
22-303½	3½"	3X	1.75
22-304	4"	2.5X	1.75
22-305	5"	2X	1.75
22-307½*	2½"	4X	2.25

WITH HEADSPRING

No.	Working Distance	Power	Price
22-321	1"	10X	\$3.25
22-321½	1½"	7X	2.75
22-322	2"	5X	2.25
22-322½	2½"	4X	2.25
22-323	3"	3.3X	2.25
22-323½	3½"	3X	2.25
22-324	4"	2.5X	2.25
22-325	5"	2X	2.25
22-327½*	2½"	4X	2.75

*Ray Ban

DOUBLE LENS

Provides two magnifications in a single loupe...extra lens is screw threaded on-and-off black plastic frame.

WITHOUT HEADSPRING

No.	Working Distance	Power	Price
22-202	1½" & 2½"	7X & 4X	\$3.25
22-206	½" & 1¼"	18X & 8X	5.25
22-212*	1½" & 2½"	7X & 4X	3.95

WITH HEADSPRING

No.	Working Distance	Power	Price
22-203	1½" & 2½"	7X & 4X	\$3.75
22-207	½" & 1¼"	18X & 8X	5.75
22-213*	1½" & 2½"	7X & 4X	4.45

*Ray Ban

PIVOT LENS

WITHOUT HEADSPRING

No.	Working Distance	Power	Price
22-360	1"	10X	\$2.75

WITH HEADSPRING

No.	Working Distance	Power	Price
22-361	1"	10X	\$3.25

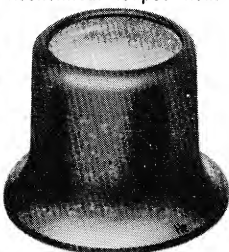
TRIPLE APLANATIC LENS

Recommended for critical examination of miniature parts. Lens has received the best possible optical correction so that viewing is free of distortion and color blurring.

No.	Working Distance	Power	Price
22-210	1"	10X	\$12.00

IMPORTED PLASTIC EYE LOUPES

Economical loupes with ground, polished lenses set in a lightweight, black plastic frame.



SINGLE LENS

WITHOUT HEADSPRING

No.	Work. Dist.	Power	Price
22-801½	1½"	7X	\$0.80
22-802	2"	5X	.50
22-802½	2½"	4X	.50
22-803	3"	3.3X	.40
22-803½	3½"	3X	.40
22-804	4"	2.5X	.40
22-805	5"	2X	.40

WITH HEADSPRING

No.	Work. Dist.	Power	Price
22-811½	1½"	7X	\$1.05
22-812	2"	5X	.75
22-812½	2½"	4X	.75
22-813	3"	3.3X	.65
22-813½	3½"	3X	.65
22-814	4"	2.5X	.65
22-815	5"	2X	.65



DOUBLE LENS

Provides two magnifications in a single loupe...extra lens is screw threaded on-and-off black plastic frame.

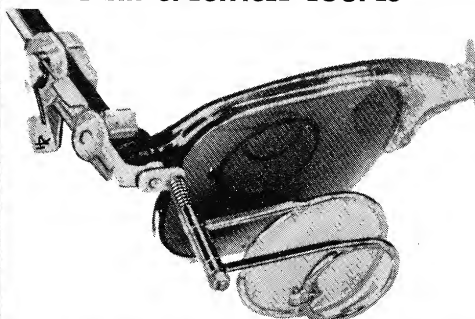
WITHOUT HEADSPRING

No.	Working Distance	Power	Price
22-286	1½" & 2½"	7X & 4X	\$1.00

WITH HEADSPRING

No.	Working Distance	Power	Price
22-287	1½" & 2½"	7X & 4X	\$1.25

BEHR SPECTACLE LOUPES



Slip on and off without removing glasses and can be attached to either side. Special self-centering clamp fits ALL wire and plastic frames. Lenses are adjustable so that optical distortion and eye strain are reduced and they swing up out of the way when not in use.

SINGLE LENS

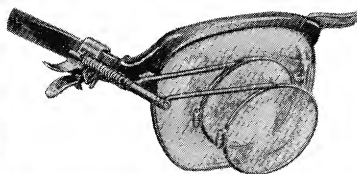
No.	Working Distance	Power	Price
22-441	1"	10X	\$4.75
22-440	1½"	9X	
22-441½	1½"	7X	
22-442	2"	5X	
22-442½	2½"	4X	
22-443	3"	3.3X	
22-443½	3½"	3X	
22-444	4"	2.5X	
22-445	5"	2X	
22-446	6"	1.7X	

DOUBLE LENS

No.	Working Distance	Powers	Price
22-241	1½" & 1"	7X & 10X	\$7.25
22-243	2" & 1"	5X & 10X	
22-240	2½" & 1"	4X & 10X	
22-244	2½" & 1½"	4X & 9X	
22-445	2½" & 1½"	4X & 7X	
22-246	2½" & 2"	4X & 5X	
22-247	3" & 2"	3.3X & 5X	
22-248	3½" & 2"	3X & 5X	
22-249	3½" & 2½"	3X & 4X	

B&L SPECTACLE LOUPES

Gold plated clamp, fits snugly on either plastic or wire frames. Lenses swing up out of way when not in use.



SINGLE LENS

No.	Work. Dist.	Power	Price
22-401½	1½"	7X	\$3.50
22-402	2"	5X	3.50
22-402½	2½"	4X	3.50
22-403	3"	3.3X	3.50
22-403½	3½"	3X	3.50
22-407½*	2½"	4X	4.00

DOUBLE LENS

No.	Working Distance	Powers	Price
22-412	1½" & 2½"	7X & 4X	\$5.25
22-413	3½" & 2"	3X & 5X	5.25
22-417*	1½" & 2½"	7X & 4X	5.75

*Ray Ban

SINGLE LENS

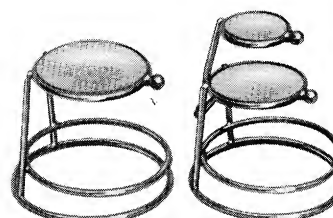
No.	Work. Dist.	Power	Price
22-621½	1½"	7X	\$1.40
22-622	2"	5X	1.25
22-622½	2½"	4X	1.25
22-623	3"	3.3X	1.25
22-623½	3½"	3X	1.25
22-624	4"	2.5X	1.25
22-625	5"	2X	1.25

DOUBLE LENS

No.	Working Distance	Power	Price
22-263	1" & 2"	10X & 5X	\$2.25
22-264	1" & 2½"	10X & 4X	2.25
22-265	1" & 3"	10X & 3.3X	2.25

ECHARCO LOUPES

A dual purpose loupe that can be used as a regular eye loupe or slipped over the eye frame on a pair of glasses.



TWIN LOUPE

Sturdy, light metal quality ground at an angle so that band is adjustable. No. 22-922 eye.

No.	Working Distance
22-922	
22-924	
22-926	
22-928	9"



Good quality aluminum frame black to eliminate glare.

No.	Working Distance
22-551	
22-551½	
22-552	
22-552½	
22-553	
22-553½	
22-554	
22-555	

No.	Working Distance
22-282	



No.	Working Distance
22-581	
22-582	
22-582½	
22-583	
22-583½	
22-584	



For rear and assemblies and awkward insulated view.

No.	Working Distance
22-712	¾"
22-713	¾"
22-715	1"

Mirrors Only plain or metal.

TWIN LOUPE



Sturdy, light metal frame has two 1 1/8"x7/8" high quality ground and polished lenses mounted at an angle so that distortion is minimized. Headband is adjustable and it can be worn over glasses. No. 22-928 has a bifocal lens in right eye.

No.	Working Distance	Power	Price
22-922	13"	1 3/4X	\$10.00
22-924	9"	2 1/2X	10.00
22-926	7"	3X	11.25
22-928	9" & 4"	2 1/2X & 6X	16.25



ALUMINUM LOUPES

Single Lens Double Lens



Good quality lenses mounted in lightweight aluminum frames with interior surfaces painted black to eliminate reflections.

SINGLE LENS

No.	Working Distance	Power	Price
22-551	1"	10X	\$2.00
22-551 1/2	1 1/2"	7X	2.00
22-552	2"	5X	1.75
22-552 1/2	2 1/2"	4X	1.75
22-553	3"	3.3X	1.75
22-553 1/2	3 1/2"	3X	1.75
22-554	4"	2.5X	1.75
22-555	5"	2X	1.75

DOUBLE LENS

No.	Working Distance	Powers	Price
22-282	1 1/2" & 1 1/2"	18X & 7X	\$2.75



SPIRAL LOUPES

Lens is mounted in a collapsible wire frame that fits over the eye frame of a pair of glasses. A leather pocket case is supplied with each loupe.

No.	Working Distance	Power	Price
22-581	1"	10X	\$3.75
22-581 1/2	1 1/2"	7X	3.75
22-582	2"	5X	3.50
22-582 1/2	2 1/2"	4X	3.50
22-583	3"	3.3X	3.50
22-583 1/2	3 1/2"	3X	3.50
22-584	4"	2.5X	3.50



DENTAL MIRRORS

For rear and side view inspection of intricate assemblies and components, especially in tight and awkward spots. Overall length 7 3/4", with insulated vinyl plastisol handles.

PLAIN

No.	Dia.	Each
22-712	5/8"	
22-713	3/4"	\$0.75
22-715	1"	

MAGNIFYING

No.	Dia.	Each
22-722	5/8"	
22-723	3/4"	\$0.75
22-725	1"	

Mirrors Only: Specify Diameter and whether plain or magnifying \$0.40 ea. or \$4.00 doz.

OPTIVISOR

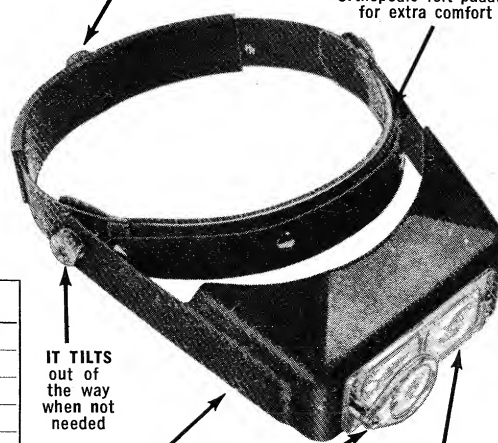
It's feather-weight, only 4 ounces, and special construction, felt-padded head band, makes the optiVISOR the most comfortable magnifier available. It will not pinch or bind even with your glasses on. The wide lens area and open bottom permit the greatest amount of light to reach the eye.



LEAVE YOUR GLASSES ON

DIAL ADJUSTMENT Easily adjusts to any head size

HEADBAND same tough Royalite® as visor Orthopedic felt padded for extra comfort



IT TILTS out of the way when not needed

DURABLE VISOR chemical, grease, flame resistant

optiLOUPE for either eye swings up... adds 2 1/2X

LENSES ground and polished, set in large viewing area 5 focal lengths to choose from

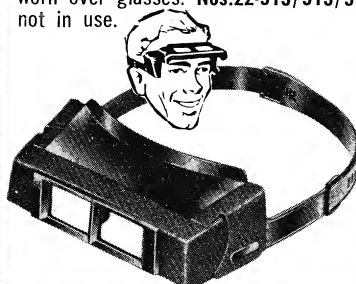
No.	Working Distance	Power	Price
22-982	20"	1 1/2X	\$14.00
22-983	14"	1 3/4X	14.00
22-985	10"	2 1/2X	14.00
22-987	6"	2 3/4X	14.00
22-990	4"	3 1/2X	16.00

ACCESSORY

No.	Description	Price
22-962	2 1/2X Optiloupe	\$2.50

MAGNIFOCUSER

Has two 1 3/8"x1" precision ground, matched prismatic optical glass lenses mounted in a plate that flips-up when not in use and easily snaps-off to change to higher or lower magnification. May be worn over glasses. Nos. 22-913/915/917 have 3 1/2X loupe attachment that swings out of way when not in use.



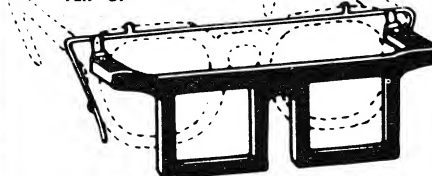
No.	Working Distance	Power	Price
22-902	20"	1 1/2X	\$12.50
22-903	14"	1 3/4X	12.50
22-905	10"	2 1/4X	12.50
22-907	8"	2 3/4X	12.50
22-910	4"	3 1/2X	15.00
22-913	14" & 4"	1 3/4X & 4 1/4X	17.50
22-915	10" & 3"	2 1/4X & 4 3/4X	17.50
22-917	8" & 2"	2 3/4X & 5 1/4X	17.50

TELESIGHTS

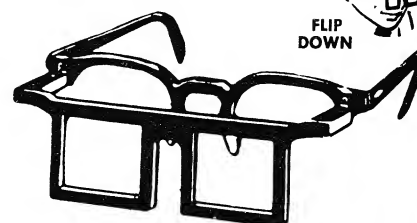
High quality prismatic lenses in plastic frames (weight 1 ounce) that attach to eye glasses; or are already attached to eyeglass half-frames (weight 2 ounces) ... for those with normal vision. Units flip-up out of way when not in use.



FLIP UP



FLIP DOWN



CLIP-ON UNIT

No.	Working Distance	Power	Price
22-943	14"	1 3/4X	\$15.00
22-944	11"	2X	15.00
22-945	9"	2 1/4X	15.00
22-946	7"	2 1/2X	15.00
22-948	5"	3X	18.00

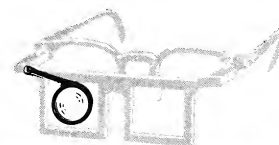
HALF-FRAME UNIT

No.	Working Distance	Power	Price
22-953	14"	1 3/4X	\$15.75
22-954	11"	2X	15.75
22-955	9"	2 1/4X	15.75
22-956	7"	2 1/2X	15.75
22-958	5"	3X	18.75

ACCESSORY

Lens adds 2 1/2 power to either eye and swings out-of-way when not in use.

No.	Description	Price
22-960	Adds 2 1/2X	\$2.50

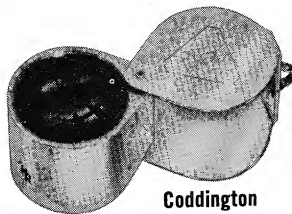


EYEGLASSES

B&L (CODDINGTON)

Though only a single lens magnifier its special construction, a grooved diaphragm around its circumference, gives a good, distortion free definition of the object being viewed.

No.	Working Distance	Power	Price
22-007	1½"	7X	\$8.00
22-010	1"	10X	8.00
22-014	¾"	14X	8.00
22-020	½"	20X	8.00



Coddington

POCKET MAGNIFIERS

Always handy... the right tool for quick, on-the-spot examination... in a wide variety of powers and styles.

Hastings



B&L (HASTINGS)

A triplet lens system for correcting spherical and chromatic aberration. It eliminates color degradation and puts every part of the field of view in sharp focus. One of the most highly corrected magnifiers available.

No.	Working Distance	Power	Price
22-027	1½"	7X	\$12.00
22-030	1"	10X	12.00
22-034	¾"	14X	12.00
22-040	½"	20X	17.50



PEER MAGNIFIERS

Imported high quality magnifiers with specially corrected lenses that give good distortion free viewing.

No.	Style	Working Distance	Power	Price
22-011	Doublet	1"	10X	\$4.00
22-016	Coddington	¾"	15X	4.50



22-012

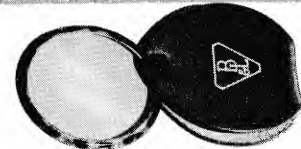


22-063

IMPORTED MAGNIFIERS

Economically priced magnifiers with spaced doublet lenses that provide distortion free viewing. No. 22-012 has leather carrying case.

No.	Style	Working Distance	Power	Price
22-012	1 Lens	1"	10X	\$1.00
22-063	2 Lenses	1" & ½"	10X & 15X	2.00



B&L MAGNIFIER WITH ATTACHED LEATHER CASE

Wide diameter low power lens for reading, checking and inspection.

No.	Lens Dia.	Working Distance	Power	Price
22-078	2"	5"	2X	\$1.50



B&L PLASTIC MOUNTED MAGNIFIERS

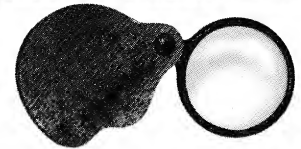
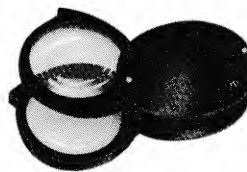
One or more lenses mounted in durable light-weight black plastic frame with attached case.

No.	Working Distance	Power	Price
22-070	2½"	4X	\$2.95
22-072	3½" to 1½"	3X, 4X, 7X	4.25
22-073	2½" to 1¼"	4X, 5X, 9X	4.25
22-074	2" to ½"	5X, 7X, 10X, 20X	4.50

IMPORTED PLASTIC MOUNTED MAGNIFIERS

Good quality lenses, economically priced, in black plastic frames and attached case.

No.	Lens Dia.	Working Distance	Power	Price
22-171	1½"	3" to 1½"	3.5X to 7X	\$1.00
22-172	1½"	2½" to 1¼"	4X to 8X	1.20

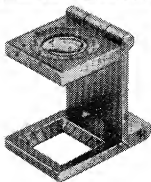


IMPORTED MAGNIFIER WITH ATTACHED LEATHER CASE

Economically priced low power lens for reading, checking and inspection.

No.	Lens Dia.	Working Distance	Power	Price
22-179	1¾"	3½"	3X	\$0.60

LINEN TESTER



Name derived from textile use, although can be used in any industry; i.e. blueprint reading. Handy because it folds flat to fit in pocket.

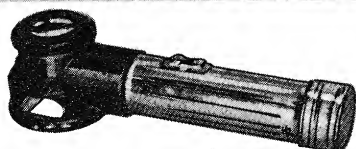
No.	Lens Dia.	Working Distance	Power	Price
22-971	¾"	1"	10X	\$2.25



B&L ILLUMINATED CODDINGTON

10X lens with grooved diaphragm that gives distortion free definition of object being viewed. Chroma battery housing holds two penlite batteries (not included) and has a pocket clip. Length approx. 6½"

No.	Lens Diameter	Working Distance	Power	Description	Price
22-050	¾"	1"	10X	Without Batteries	\$7.50



IMPORTED FLASH MAGNIFIER

7X spaced doublet lens system gives good definition of object being viewed. Has a removable inch and millimeter gauge and operates on two small standard batteries (not included). Reflector and chromed housing measure approx. 6¾"

No.	Lens Dia.	Working Distance	Power	Price
22-069	1¼"	1½"	7X	\$1.95



No. 22-055



No. 22-056
No. 22-057

5X triple lens system eliminates color degradation and puts every part of the viewing area in sharp focus. Accessories include a tripod, detachable handle and a choice of illuminating holders.

No.	Lens Diameter	Working Distance	Power	Price
22-055	1½"	2"	5X	\$15.00

ACCESSORIES

No.	Description	Price
22-056	Battery operated holder only	\$21.00
22-057	110V AC operated holder only	21.00

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

EDROY MINI-MAG POCKET READER

3½X lens, 1¾"x1" plastic case.

No.	Price
22-120	

EDROY LONG VIEW POCKET READER

2½X lens, 3¼"x1" plastic case.

No.	Price
22-122	Sp

Specify color

EDROY RECTANGULAR READER

2½X lens, 3¾"x1" or two-tone plastic case.

No.	Price
22-127	S

Specify



Has the distortionary for tool and teria counting Semi-achromatic weight plastic

No.	Price
22-297	



POCKET READER

With 50X magnification. All lenses and pocket

No.	Price
22-062	

READERS

An excellent assortment of readers whose low power and wide viewing area help reduce eye strain from constant reading and checking of circuits and their diagrams, blueprints, recording data, etc. All have carefully ground and polished lenses.

**EDROY MINI-MAG
POCKET READER**



3½X lens, 1⅞" x 1", mounted in a walnut plastic case.

No.	Working Distance	Price
22-120	3"	\$3.00

**EDROY LONG VIEW
POCKET READER**



2½X lens, 3¼" x 1", in blonde, walnut or two-tone plastic case.

No.	Color	Working Distance	Price
22-122	Specify	6½"	\$6.50

Specify color with order number

**EDROY
RECTANGULAR
READER**



2½X lens, 3⅝" x 1", mounted in blonde, black or two-tone plastic.

No.	Color	Working Distance	Price
22-127	Specify	6"	\$4.50

Specify color with order number

**B & L
RECTANGULAR
READERS**



2.8X lens, white crown glass, 3⅞" x 1⅞", mounted in light plastic frames.

No.	Color	Working Distance	Price
22-080	Ivory	9"	\$4.50
22-081	Blonde	9"	4.50
22-082	Ebony	9"	4.50

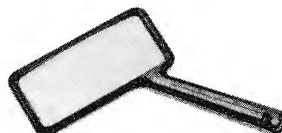
**B & L
ILLUMINATED
READER**



Casts its light over a wide field of view. 2X lens, 3¾" x 2", mounted in an ebony plastic frame with on-off switch.

No.	Working Distance	Price
22-084	8"	\$9.75

**IMPORTED
RECTANGULAR
READER**



2½X lens, 3½" x 1½", mounted in a black plastic frame.

No.	Working Distance	Price
22-110	6"	\$2.75

**B & L
ROUND
READERS**



Have pure white crown glass lenses that give excellent image clarity.

No.	Lens Diameter	Working Distance	Price
22-092½	2½"	6"	\$3.95
22-093	3¼"	8"	4.95
22-094	4"	10"	5.95
22-095	5"	13"	9.95

B&L REDUCING GLASS

Shows how objects will look in a wide variety of reduced sizes.

No.	Lens Diameter	Working Distance	Price
22-097	3"	7"	\$6.75

**IMPORTED
ROUND
READERS**



Economically priced readers with good quality lenses.

No.	Lens Diameter	Working Distance	Price
22-102	2"	5"	\$0.75
22-102½	2½"	6"	1.00
22-103	3"	7½"	1.50
22-103½	3½"	8"	1.85
22-104	4"	10"	2.50



**B & L
ENGRAVERS
MAGNIFIER**

Has the distortion free, flat field of view necessary for tool and die making, engraving, bacteria counting, circuitry, biology work etc. Semi-achromatic lens is mounted in a light-weight plastic frame.

No.	Lens Dia.	Working Distance	Power	Price
22-297	1⅞"	3"	3.5X	\$4.95

MAGNIFIER STAND

For holding the engravers magnifier during continuous inspection or assembly. The rod holding the adjustable arm is approximately 13" high and is affixed to a heavy metal base.



No.	Description	Price
22-965	Height 13"	\$8.25



BENCH MAGNIFIER

A tiny, only 3½" high, bench magnifier with a wide 2½" diameter lens attached to a ball joint arm that permits it to be rotated and angled in any direction.

No.	Lens Dia.	Working Distance	Power	Price
22-116	2½"	3½"	3X	\$3.50



POCKET MICROSCOPE

With 50X magnification for instant microscopic inspection. All metal housing with good quality lens and pocket clip.

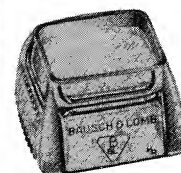
No.	O.L.	Power	Price
22-062	3¾"	50X	\$1.95



SEITZ ADJUSTABLE LOUPE

Uses the focusing principle found in field glasses to adjust the lens to an individual's eyesight. High quality blue tinted lens gives a sharp view.

No.	Working Distance	Power	Price
22-370	1"	10X	\$12.00
22-371	½"	20X	12.00



**B & L
VERNIER GAUGE
MAGNIFIER**

Magnetically adheres to vernier calipers, gauges and other small ferrous metal scales so that quick, accurate readings are possible. Lens is mounted on clear plastic base that is fitted with two permanent magnets. Size: 1⅞" x 1¼" x ⅞".

No.	Size	Price
22-064	1⅞" x 1¼" x ⅞"	\$2.50

GROBET SWISS FILES

Made of chrome alloy steel for extreme hardness and durability, then machined and hand finished for precision shape, accuracy of size, and proper balance.



BARRETTE

No.	Length	Dimensions	Cut Nos.	Each
23-110	4"	$\frac{1}{2}" \times \frac{1}{8}"$	2	\$1.65
			4	1.75
	6"	$2\frac{3}{32}" \times \frac{5}{32}"$	00 & 0	1.95
			1 & 2	2.10
			4	2.25

Specify Order No., Length, and Cut No. when ordering.



HALF ROUND

No.	Length	Dimensions	Cut Nos.	Each
23-170	3"	$\frac{5}{16}" \times \frac{3}{32}"$	4	\$1.75
			2	1.80
	4"	$1\frac{15}{32}" \times \frac{3}{64}"$	3 & 4	2.05
			0	1.75
	5"	$1\frac{1}{32}" \times \frac{5}{32}"$	2	2.10
			3 & 4	2.40
			00 & 0	2.05
			1 & 2	2.35
	6"	$\frac{5}{8}" \times \frac{13}{64}"$	3 & 4	2.70
			6	3.40

Specify Order No., Length, and Cut No. when ordering.



HALF ROUND RING

No.	Length	Dimensions	Cut Nos.	Each
23-180	6"	$\frac{1}{2}" \times \frac{5}{32}"$	00 & 0	\$2.05
			1 & 2	2.35
			3 & 4	2.70
			00 & 0	2.85
	7"	$\frac{1}{2}" \times \frac{5}{32}"$	2	3.25

Specify Order No., Length, and Cut No. when ordering.



FLAT HAND

No.	Length	Dimensions	Cut Nos.	Each
FLAT HAND				
23-210	4"	1 ¹⁷ / ₃₂ " x 1 ¹ / ₈ "	2	\$1.15
			4	1.30
	6"	2 ²⁵ / ₃₂ " x 1 ¹ / ₆₄ "	00 & 0	1.45
			1 & 2	1.60
			3 & 4	1.85
			6	2.25
	8"	2 ²⁹ / ₃₂ " x 3 ¹ / ₁₆ "	00 & 0	2.10
			1 & 2	2.25
COMBINATION BURNISHER AND FLAT HAND				
23-220	5"	3 ¹ / ₃₂ " x 3 ¹ / ₆₄ "	5	2.00

Specify Order No., Length, and Cut No. when ordering.



EQUALLING

No.	Length	Dimensions	Stubs	Cut Nos.	Each
23-150	4"	$1\frac{1}{32}" \times .028"$	22	2	\$1.30
		$1\frac{1}{32}" \times .028"$	22	4	1.40

Specify Order No., Length, and Cut No. when ordering.



CROSSING

No.	Length	Dimensions	Cut No.	Each
23-130	6"	$\frac{5}{8}" \times \frac{13}{64}"$	2	\$2.85

Specify Order No., Length, and Cut No. when ordering.



ROUND

No.	Length	Diameters	Cut Nos.	Each
23-350	3"	$\frac{3}{32}"$	2	\$.90
			3 & 4	1.00
			6	1.10
	4"	$\frac{5}{32}"$	2	1.00
			3 & 4	1.10
			2	1.10
	5"	$1\frac{3}{64}"$	3 & 4	1.20
			0	1.20
			1 & 2	1.30
	6"	$1\frac{3}{64}"$	3 & 4	1.40

Specify Order No., Length, and Cut No. when ordering.



PILLAR



NARROW PILLAR

No.	Length	Dimensions	Cut Nos.	Each
REGULAR PILLAR				
23-310	6"	1/2" x 1 1/64"	00 & 0	\$1.15
			1 & 2	1.20
			3 & 4	1.40
NARROW PILLAR				
23-320	6"	1/4" x 9/64"	00 & 0	1.15
			1 & 2	1.20
			4	1.40

Specify Order No., Length, and Cut No. when ordering.



SCREWHEAD

No.	Length	Dimensions	Each
SCREW HEAD WITH TANG			
23-370	2"	$1\frac{1}{32}" \times .015"$	\$1.30
	3"	$2\frac{5}{64}" \times .019"$	1.60
SCREW HEAD WITHOUT TANG			
23-380	2"	$1\frac{1}{64}" \times .015"$	1.30
	3"	$2\frac{5}{64}" \times .015"$	1.60

Specify Order No. and Length when ordering.

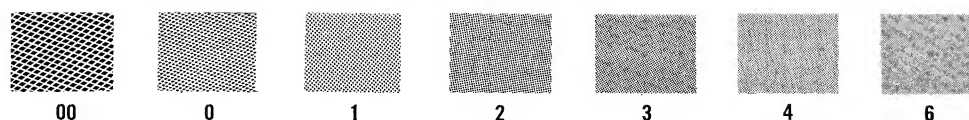


THREE SQUARE

No.	Length	Dimensions	Cut Nos.	Each
23-410	4"	$\frac{3}{32}"$	4	\$1.35
	6"	$\frac{3}{32}"$	00 & 0	1.40
			1 & 2	1.55

Specify Order No., Length and Cut No. when ordering.

SCALE OF CUTS



- File prices apply to small quantities. Industrial users apply for quotations.
- The length of a file is always understood to mean the length of the cut part only.

STUBS SWISS PATTERN FILES

Made of finest quality steel — just the right hardness and temper. Will outwear most other files. Packaged individually (except screwhead files) to protect cutting edges. Made in England by the famous Stubs factory.



BARRETTE

No.	Length	Width & Thick.	Cut Nos.	Each
23-112	6"	40/64" x 10/64"	00 & 0	\$1.70
			1 & 2	1.75
			3 & 4	1.85

Specify Order No. and Cut No. when ordering.



FLAT HAND

No.	Length	Width & Thick.	Cut Nos.	Each
23-212	6"	40/64" x 10/64"	00 & 0	\$1.20
			1 & 2	1.30
			3 & 4	1.45

Specify Order No. and Cut No. when ordering.



HALF ROUND

No.	Length	Width & Thick.	Cut Nos.	Each
23-172	6"	40/64" x 12/64"	00 & 0	\$1.50
			1 & 2	1.60
			3 & 4	1.70

Specify Order No. and Cut No. when ordering.



PILLAR

No.	Length	Width & Thick.	Cut Nos.	Each
23-312	6"	32/64" x 12/64"	00 & 0	\$1.00
			1 & 2	1.05
			3 & 4	1.15

Specify Order No. and Cut No. when ordering.



HALF ROUND RING

No.	Length	Width & Thick.	Cut Nos.	Each
23-182	6"	38/64" x 9/64"	00 & 0	\$1.50
			1 & 2	1.60
			3 & 4	1.70

Specify Order No. and Cut No. when ordering.



NARROW PILLAR

No.	Length	Width & Thick.	Cut Nos.	Each
23-322	6"	16/64" x 8/64"	00 & 0	\$1.00
			1 & 2	1.05
			3 & 4	1.15

Specify Order No. and Cut No. when ordering.



SCREWHEAD

No.	Length	Width	Each
23-372	3"	25/64"	\$0.80



DOUBLE END VULCANITE

No.	Length	Width & Thick.	Cut Nos.	Each
23-192	8"	40/64" x 11/64"	For Plastic	\$1.50



THREE SQUARE

No.	Length	Width & Thick.	Cut Nos.	Each
23-412	6"	24/64"	00 & 0	\$1.20
			1 & 2	1.30
			3 & 4	1.45

Specify Order No. and Cut No. when ordering.

GROBET NEEDLE FILES

Precision files, for delicate work especially under magnification. Made of the highest quality steel that has been machined and hand finished for precision shape, accuracy of size and proper balance. All have round knurled handles.

No.	Style	Overall Length	Cut		Each
			Length	Number	
23-711	Barrette	5½"	2½"	2,3,4&6	\$1.10
		6¼"	3"	0,1,2,3,4&6	1.20
		7¾"	4½"	00,0,1,2,3&4	1.45
23-713	Crossing	5½"	2½"	2,3&4	1.10
		6¼"	3"	0,2,3&4	1.20
		7¾"	4½"	0&2	1.45
23-715	Equalling	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	1,2,3&4	1.20
23-717	Half Round	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	0,1,2,3,4&6	1.20
		7¾"	4½"	0,1,2&3	1.45
23-721	Entering or Warding	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	2,3&4	1.20
23-727	Knife	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	0,2,3&4	1.20
23-735	Round	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	0,1,2,3,4&6	1.20
		7¾"	4½"	0,2&4	1.45
23-739	Square	5½"	2½"	1,2,3,4&6	1.10
		6¼"	3"	0,1,2,3,4&6	1.20
23-741	Three Square	5½"	2½"	2,3,4&6	1.10
		6¼"	3"	0,1,2,3,4&6	1.20
		7¾"	4½"	00,0,1,2,3&4	1.45
23-743	Marking	5½"	2½"	2&4	1.10
23-745	Slitting	5½"	2½"	2,3&4	1.10
23-747	Round Edge Joint	5½"	2½"	2,3&4	1.10

Specify Order No., Length Overall, & Cut No. when ordering.

Note—Equivalent overall lengths in centimeters is as follows: 14cm (5½"), 16cm (6¼"), and 20cm (7¾").

SETS IN PLASTIC CASE

One each of the twelve styles shown above in a special plastic case with individual spring-lock compartments for each file. Case slides apart and has standing base on each half.



No.	Style	Overall Length	Cut		Set
			Length	Number	
23-700	Assorted	5½"	2½"	0,2,4&6	\$ 9.73
		6¼"	3"	0,2,3,4&6	10.53
		7¾"	4½"	0&2	13.14

Specify Order No., Length Overall, & Cut No. when ordering.

STUBS OLYMPIC NEEDLE FILES

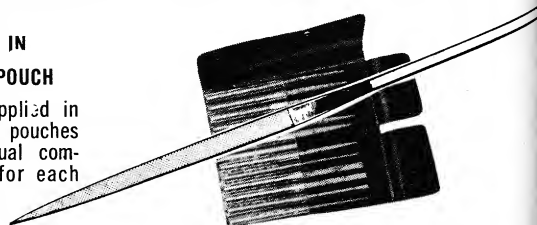
Economical, good quality, needle files for use on practically all small filing work. All have just the right hardness and temper, with round, knurled (non-slip) handles. Overall length 14 centimeters.

No.	Style	Overall Length	Cut		Each
			Length	Number	
23-761	Barrette	5½"	2½"	2,3&4	\$0.50
23-763	Crossing	5½"	2½"	2,3&4	.50
23-765	Equalling	5½"	2½"	2,3&4	.50
23-767	Half Round	5½"	2½"	2,3&4	.50
23-771	Entering or Warding	5½"	2½"	2,3&4	.50
23-777	Knife	5½"	2½"	2,3&4	.50
23-785	Round	5½"	2½"	2,3&4	.50
23-789	Square	5½"	2½"	2,3&4	.50
23-791	Three Square	5½"	2½"	2,3&4	.50
23-793	Marking	5½"	2½"	2,3&4	.50
23-795	Slitting	5½"	2½"	2,3&4	.50
23-797	Round Edge Joint	5½"	2½"	2,3&4	.50

Specify Order No. and Cut No. when ordering.

SETS IN PLASTIC POUCH

Sets are supplied in soft plastic pouches with individual compartments for each file.

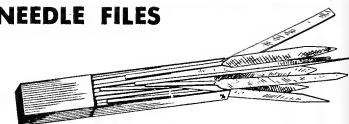


No.	Description	Set
23-751	Set of 12 assorted	\$4.80

Specify Order No. and Cut No. (2, 3 or 4) when ordering.

UMV NEEDLE FILES

Good quality economical files 5½" long with 2½" cuts and knurled handles.



SETS IN CARDBOARD BOX

No.	Description	Cut Nos.	Set
23-701	12 Assorted Shapes	2,3&4	\$5.25

Specify Order No. and Cut No. when ordering.

SEPARATE SIZES . . . Cut-Nos. 2, 3 & 4 . . . Each \$0.55

No.	Style	No.	Style	No.	Style
23-712	Barrette	23-718	Half Round	23-736	Round
23-714	Crossing	23-722	Entering	23-740	Square
23-716	Equalling	23-728	Knife	23-742	Three Square

Specify Order No. and Cut No. when ordering.

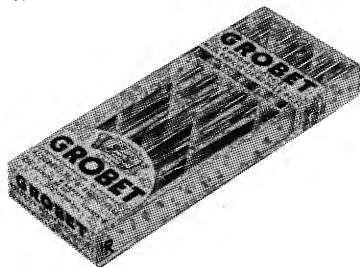
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

GROBET ESCAPEMENT FILES

Also known as square handle needle files. These precision files are available in special shapes as well as the normal styles. Overall $5\frac{1}{2}$ ".

No.	Style	Cut Nos.	Each
23-811	Barrette	2,3,4&6	\$1.00
23-813	Crossing	2,3,4&6	1.00
23-815	Equalling	2,4&6	1.00
23-817	Half Round	2,3,4&6	1.00
23-821	Entering or Warding	2,3,4&6	1.00
23-827	Knife	2,3,4&6	1.00
23-835	Round	2,3,4&6	1.00
23-839	Square	2,3,4&6	1.00
23-841	Three Square	2,3,4&6	1.00
23-842	Three Square Slim & Short	2,4&6	1.00
23-851	Balance Wheel	6	1.00
23-854	Cylinder Plug	6	1.00
23-855	Rounding Off	6	1.00
23-857	Notch	6	1.00
23-858	Notch Small	6	1.00

Specify Order No. and Cut No. when ordering.



SETS IN PLASTIC CASE

For the watchmaker or mechanic... see note below. Set contains 12 files packed in a special case with individual spring-lock compartments for each file. Case slides apart and has standing base on each half.

No.	Style	Cut Nos.	Set
23-800	Watchmakers	6	\$9.87
23-801	Mechanics	2,4&6	9.87

Specify Order No. and Cut No. when ordering.

NOTE: Watchmakers set contains: Square, Equalling, Warding, Barrette, Balance Wheel, Balance Wheel Small, Escapement Wheel, Cylinder Plug, Rounding Off Small, Notch, Notch Small and Dove Tail. Mechanics set contains: Round, Half Round, Square, Three Square, Equalling, Warding, Knife, Barrette, Balance Wheel, Rounding Off and Ratchet Sword.

GROBET RIFFLERS

For removing bits of metal in tight or awkward places. All are double ended and about 6".

	No. 23-471
	No. 23-472.
	No. 23-473.
	No. 23-474.
	No. 23-475.
	No. 23-476.
	No. 23-477.
	No. 23-478.
	No. 23-479.
	No. 23-480.
	No. 23-481.
	No. 23-482.
	No. 23-483.
	No. 23-484.
	No. 23-485.
	No. 23-486.
	No. 23-487.
	No. 23-488.

SEPARATE SIZES... Each \$2.30

Specify Order No. (above) and Cut No. (either 2 or 4), when ordering.

SET

Contains one each of the 18 rifflers illustrated above.

No.	Cut Nos.	Set
23-498	2&4	\$31.07

Specify Order No. and Cut No. when ordering.

OPTICAL RIFFLE FILE

Screw finishing file curved to fit concave side of lens.

No.	Length	Cut	Each
23-470	6"	3	\$2.30

ROUND LENS FILES

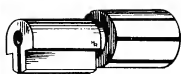
Fine cut for smoothing and finishing. Diameters by Stub's Wire Gauge.

No.	Length	Dia.	Doz.
23-450	4 $\frac{1}{8}$ "	52	\$2.10
23-453	4"	47	2.10
23-454	2 $\frac{7}{8}$ "	47	2.00

STEEL FILE BLOCK

Rotating head has various sizes of slots for resting work while filing. Fits in bench vise.

No.	Length	Each
23-962	1 $\frac{1}{4}$ "	\$2.20



FILE HANDLES

Natural finished hardwood handles with metal ferrules.

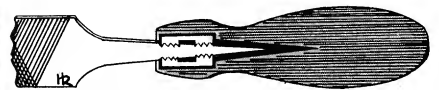
No.	Length	Dia.	Dozen
27-108	3"	$\frac{3}{16}$ "	\$1.60
27-120	3"	$\frac{1}{16}$ "	
27-109	3 $\frac{1}{2}$ "	$\frac{3}{16}$ "	
27-109 $\frac{1}{2}$	4"	$\frac{1}{2}$ "	
27-110	4"	$\frac{1}{16}$ "	
27-111	4"	$\frac{5}{16}$ "	
27-112	4"	$\frac{3}{4}$ "	



FILE HANDLE

Hardwood handle with metal ferrule $\frac{1}{2}$ " in diameter.

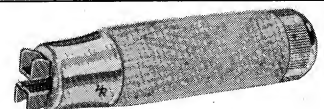
No.	O. L.	Dozen
27-150	3 $\frac{3}{4}$ "	\$2.25



SKROO-ZON FILE HANDLES

Steel die inside wood handle cuts its own thread on file tang.

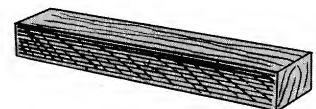
No.	Description	Each
27-193	For Small Files	\$0.25
27-194	For 4" Files	.25
27-195	For 5" Files	.30
27-196	For 6" Files	.30



ADJUSTABLE FILE HANDLE

Has self-equalizing parallel jaws ($1\frac{3}{4}$ " deep) for gripping tang handles, files, hacksaw blades, reamers, knife blades, etc. Metal parts made of steel with hardwood handle and knurled knob for positive locking.

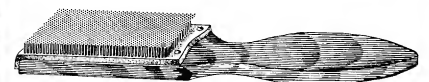
No.	Length	Dia.	Price
27-191	5"	1 $\frac{1}{4}$ "	\$1.05



WOOD FILE BLOCK

For resting work while filing small articles. Fits in bench vise. Made of boxwood.

No.	Dimensions	Each
23-965	3" x $1\frac{1}{16}$ " x $\frac{1}{2}$ "	\$0.25



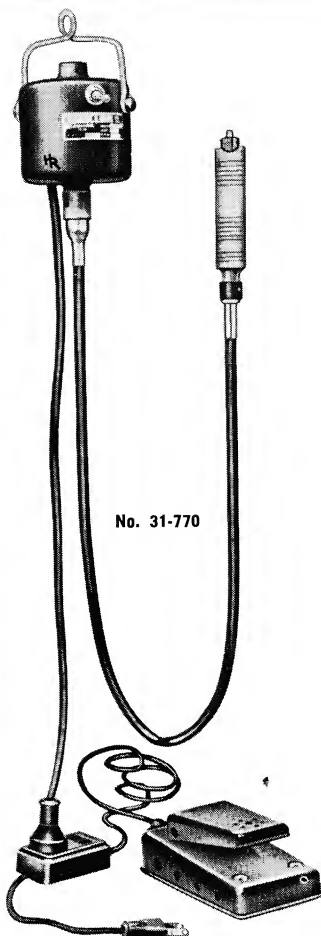
FILE CLEANER

Steel wire bristles mounted on wood handle for cleaning files or particles that are clogging the teeth.

No.	Length	Each
23-972	10"	\$0.60

X-REFERENCE — For Pivot Files See Page 16

FLEX SHAFT AND ACCESSORIES



No. 31-770



FLEX-SHAFT MACHINES

For speed, flexibility and convenience, no machine surpasses a flexible shaft for small drilling, polishing, buffing, milling, slotting, sawing, buffing, grinding, counter-sinking, etc.

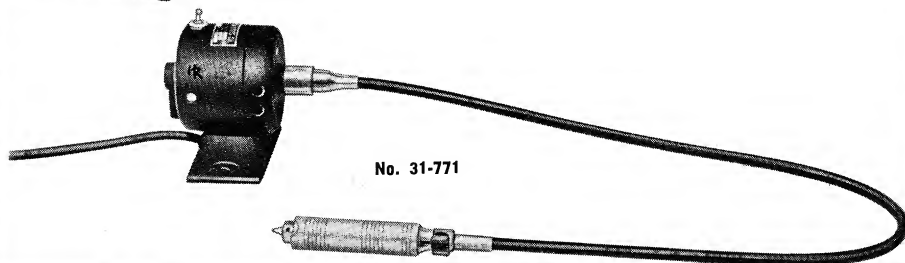
HR Superior Flex-Shaft Machines are particularly adapted to the requirements of jewelers, stone and diamond setters, die sinkers, engravers, watchmakers, toolmakers, etc.

The HR Flex-Shaft is operated by a powerful, quiet running K&D motor that is adapted for use with a hanging bracket or a special base for use on a bench. Its motor is 1/15hp, has an on-off switch and is suitable for 110 AC or DC current. Models are available with a foot rheostat for regulating speeds from 200 to 10,000 RPM.

The flexible shaft is approximately 36" long, exclusive of the hand piece, and comes complete with detachable hand piece that is fitted with a No. "O" Jacobs Chuck (capacity 0 to 3/32").

No.	Style	Description*	Each
31-770	Hanging	With Foot Rheostat	\$58.15
		Without Foot Rheostat	53.50
31-771	Bench	With Foot Rheostat	59.15
		Without Foot Rheostat	54.50

*We will ship model with foot rheostat unless otherwise specified.



No. 31-771

ACCESSORIES

14-301 14-303 14-306



ADAPTOR

Handy for holding drills and other small tools. Fits a No. 24 Wire Chuck and Flexible Shaft handpieces.

No.	Capacity	Each
31-240	1.15mm	\$0.75
31-241	2.50mm	1.00
31-242	2.90mm	1.10



MANDRELS

Mandrels with 3/32" arbors for holding midget wheel buffs and cones.

No.	Description	Each
14-301	Plain Mandrel	\$0.15
14-303	Reinforced Mandrel	.25
14-306	Taper Screw Mandrel	.20

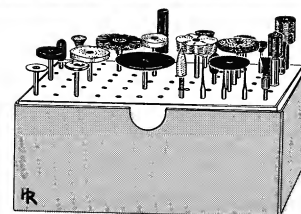


BRUSHES BUFFS BURS DRILLS SAWS STONES

X-REFERENCE

A broad selection of different size brushes, buffs, burs, etc., for use with the HR Superior Flex-Shaft Machines, can be found on the following pages:

Brushes	Page 13	Drills	Pages 28 & 29
Bufs	Page 15	Saws	Page 87
Burs	Pages 16 & 17	Stones	Pages 106 to 108



SETS OF WHEELS, BUFFS, ETC.

For milling, stone setting, slotting, counter-sinking, grinding, polishing, removing rust, and sharpening small tools.

Sets contain various assortments of small grinding wheels, burs, saws, brushes and buffs for use with flexible shaft machines and precision lathes. All are mounted on 3/32" arbors.

18 PIECE ASSORTED SET

- 6 Assorted Stones
- 6 Assorted Metal Burs
- 3 Assorted Polishing Brushes
- 1 Felt Buff on Screw Mandrel
- 1 Sandpaper Disc on Mandrel
- 1 Polishing Cylinder Mandrel

No.	Description	Set
33-018	18 Assorted Pieces	\$5.95

26 PIECE ASSORTED SET

- 4 Assorted Stones
- 5 Assorted Metal Burs
- 2 Circular Saws on Mandrels
- 1 Cut-off Disc
- 5 Assorted Polishing Brushes
- 4 Felt Buffs on Screw Mandrels
- 3 Assorted Rubber Wheels on Mandrels
- 1 Sandpaper Disc on Mandrel
- 2 Sanding Drums

No.	Description	Set
33-026	26 Assorted Pieces	\$9.70

12 PIECE ASSORTED SET

- 5 Assorted Polishing Brushes
- 3 Assorted Stones
- 2 Metal Burs
- 1 Felt Buff
- 1 Rubber Wheel on Mandrel

No.	Description	Set
33-001	12 Assorted Pieces	\$4.95

12 PIECE ASSORTED SET

- 4 Assorted Stones
- 3 Metal Burs
- 3 Assorted Polishing Brushes
- 1 Rubber Wheel on Mandrel
- 1 Felt Wheel on Mandrel

No.	Description	Set
33-002	12 Assorted Pieces	\$2.20

12 PIECE BRUSH SET

- 4 Wheel Shaped Bristle Brushes
- 4 Cup Shaped Bristle Brushes
- 4 Porte Polishing End Brushes

No.	Description	Set
33-003	12 Assorted Brushes	\$2.20

12 PIECE LARGE GRINDING STONE SET

- 10 Assorted Stones
- 1 Rubber Wheel on Mandrel
- 1 Heatless Wheel on Mandrel

No.	Description	Set
33-004	12 Assorted Stones	\$3.95

12 PIECE SMALL BUR SET

- 12 Assorted Shapes and Sizes

No.	Description	Set
33-005	12 Assorted Burs	\$2.20

12 PIECE VULCANITE LARGE BUR SET

- 12 Assorted Shapes and Sizes

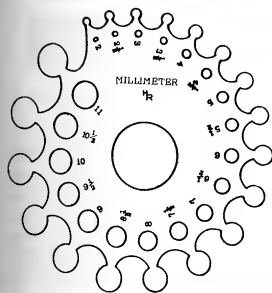
No.	Description	Set
33-007	12 Assorted Burs	\$6.95

12 PIECE SMALL GRINDING STONE SET

- 12 Assorted Mounted Stones

No.	Description	Set
33-009	12 Assorted Stones	\$2.20

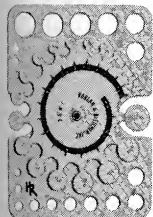
PRICES SUBJECT TO CHANGE WITHOUT NOTICE



BAKER'S STONE AND MOUNTING GAUGE

Aluminum gauge with holes for measuring stones, while the round extensions are used to measure mountings. One side shows mm's and the other the corresponding carat measurement.

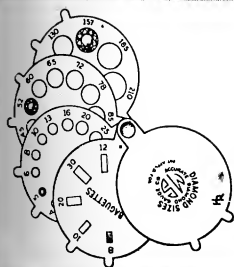
No.	Dia.	Each
24-113	3"	\$1.00



K&B DIAMOND AND STONE GAUGE

Aluminum pocket gauge made to measure loose stones and settings ranging from .03 points to 4 carats. A Birthstone Chart is shown on the reverse side for ready reference.

No.	Length	Each
24-121	3½"	\$1.50



ACCURATE DIAMOND GAUGE

Folds to the size of a half dollar and yet measures round and baguette stones from 1/100 to 2 carats. Made from Stainless Steel and Nickel Silver to give a lifetime of service.

No.	Dia.	Each
24-119	1½"	\$2.50

RING SIZES

Brightly plated, accurately gauged, and graduated in half sizes by U.S. Standard.

STANDARD

For measuring fingers for normal width rings. Nos. 24-524/524½ include sizes for the larger men's rings.

No.	Style	Numerals	Each
SIZES 1 TO 13			
24-504	Regular Flat	Colored	\$3.10
24-504½	Regular Flat	Plain	2.65
24-505	Half-round	Colored	3.35
SIZES 1 TO 16			
24-524	Regular Flat	Colored	4.25
24-524½	Regular Flat	Plain	3.95



WIDE

For measuring fingers for extra wide and heavy rings. Graduated by half sizes from 1 to 15.

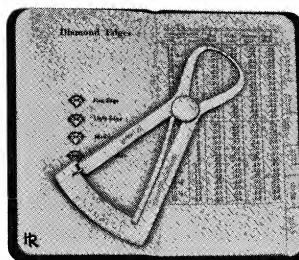
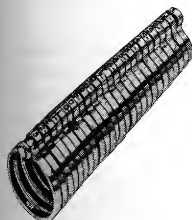
No.	Style	Numerals	Each
24-506	Regular Flat	Plain	\$7.50
24-507	Half-round	Plain	7.75



POCKET

Fits in your pocket so that it is available when needed. Easy to find and select a particular size because colored numerals are always in view. Accurately gauged in half size from 1 to 13.

No.	Style	Numerals	Each
24-508	Regular Flat	Colored	\$3.35



MOIE DIAMOND GAUGE

Computes exact weight of diamond without removing stone from mounting. You measure width and depth of diamond and then find weight of stone by comparing measurements with table. Used by jewelers throughout the world.

No.	Description	Each
24-105	Comp. with book	\$6.50

RING STICKS

Used for gauging the size of rings. Graduated by quarter sizes according to U.S. Standard. Models available with groove for stone set rings.



HOLLOW METAL

Have wood handles and tip, and gauge showing lengths of material needed to make ring.

No.	Style	Each
SIZES 1 TO 13		
24-502	Regular	\$5.50
24-503	Grooved	6.50
SIZES 1 TO 15		
24-512	Regular	6.75
24-513	Grooved	8.00



ALUMINUM

Made of solid aluminum. Measures sizes 1 to 13 by quarter sizes.

No.	Style	Each
24-510	Grooved	\$4.25
24-514	Regular	3.95



PLASTIC

Hollow — Measures sizes 1 to 15 with gauge to show length of material needed to make ring.

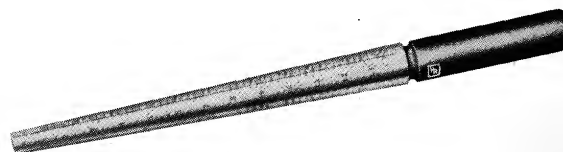
No.	Style	Each
24-515	Grooved	\$4.00



PLASTIC

Solid — Economical, measures sizes 1 to 13.

No.	Style	Each
24-517	Grooved	\$2.00

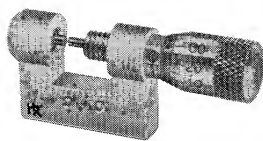


MANDRELS

Used for straightening, enlarging, gauging and modeling rings. Graduated from 1 to 13 in quarter sizes. Made of hardened tool steel.

No.	Style	Each
32-606	Regular	\$7.50
32-609	Grooved	8.00

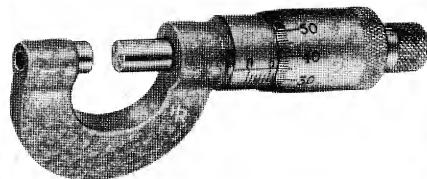
GAUGES



MIDGET MICROMETER

Only 2" long and less than 1" high. Graduated in millimeters.

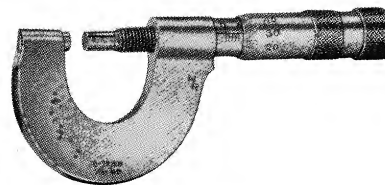
No.	Capacity	Each
24-429	0 to 10mm, by 0.01mm	\$4.25



SMALL MICROMETER

Has large barrel for easy reading, and friction stop. Only 3 1/4" long, graduated in millimeters.

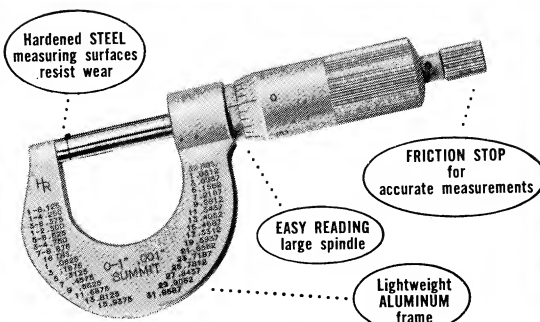
No.	Capacity	Each
24-469	0 to 15mm, by 0.01mm	\$9.75



MICROMETER

Imported precision micrometer 4 3/8" long with friction stop, and graduated in millimeters.

No.	Capacity	Each
24-435	0 to 25mm, by 0.01mm	\$10.75



LIGHTWEIGHT MICROMETER

Low cost accurate micrometer with a lightweight anodized aluminum frame... for every workbench.

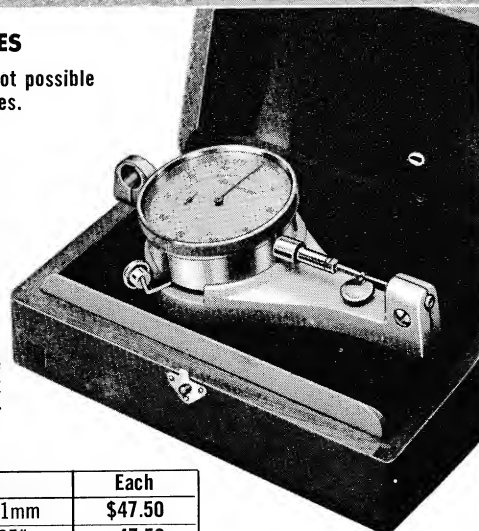
The Summit Micrometer is a precision gauge, designed for accurate measurements from 0 to 1", in thousandths of an inch. Measuring surfaces are made of hardened steel to resist wear, and the lightweight aluminum frame is tapered so that it will fit a 3/8" hole. A spanner wrench is provided to recalibrate the spindle, and decimal equivalents are stamped on the frame. Comes packaged in a foam padded cardboard case.

No.	Measuring Capacity	Price
24-430	0 to 1", by .001"	\$4.75

JKA DIAL GAUGES

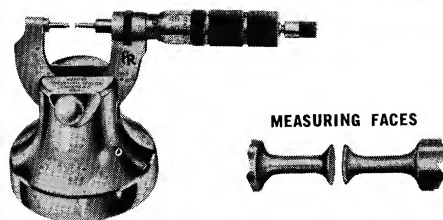
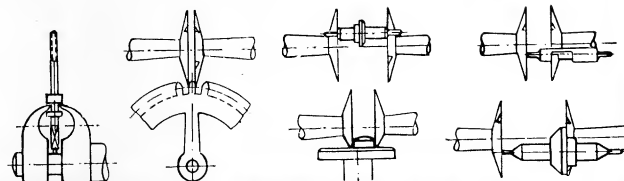
Special jaws permit measurements not possible with conventional gauges.

A precision gauge with two styles of jaws for measuring very small parts of a wide variety of shapes. The slender jaws on the right are centered above an adjustable work table. These same jaws are also slotted to provide true measurements of shaft modifications such as grooves, concentric steps, etc. The pincer jaws on the left are for measuring the inside of slots. The JKA Dial Gauge is mounted in a felt lined wood case, has a zero adjusting dial.



No.	Capacity	Each
24-490	0 to 10mm, by 0.1mm	\$47.50
24-491	0 to 3/8", by .0005"	47.50

EXAMPLES



CENTRAL MICROMETERS SPECIAL MEASURING FACES

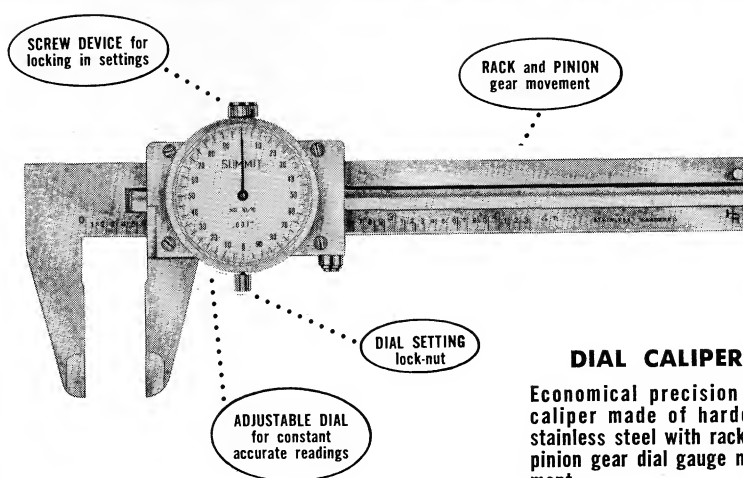
Measuring surface has been moved closer to the center of the frame and designed so that it is able to measure miniature gear teeth and similar difficult tasks which are beyond the ability of the ordinary micrometer.

The Central Micrometer is a high quality precision tool made of the best quality metals with extra-hard measuring surface lapped parallel and square. It is 5" long, has a satin chrome finish and is graduated in millimeters. Capacity is 0 to 15mm, by 0.01mm.

No.	Description	Each
24-455	With Friction Stop	\$17.95
24-456	Friction Stop & Locknut	19.25

ACCESSORIES

No.	Description	Each
24-461	Stand, black crackle finish	\$5.95
24-463	Leather Case	2.95



DIAL CALIPER

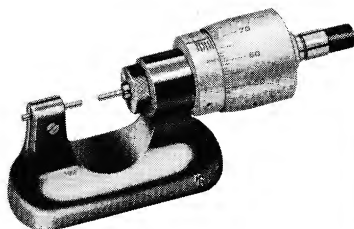
Economical precision dial caliper made of hardened stainless steel with rack and pinion gear dial gauge movement.

The Summit Dial Caliper is a precision instrument designed for accurate outside measurements from 0 to 4" in thousandths of an inch, with a rack and pinion gear movement to give continuous precise readings. It has a screw tightening device, that can be used with one hand, to lock-in measurement settings. Comes supplied with a leather case that can be conveniently hooked on belt.

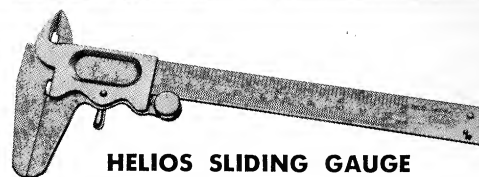
No.	Measuring Capacity	Price
24-635	0 to 4", by .001"	\$12.50

BENCH MICROMETER

Has small diameter measuring surface so that miniature parts are always in view, and a large easy-to-read spindle. Small, compact (4½" long, 2" high), heavy, with friction stop. Graduated in millimeters.

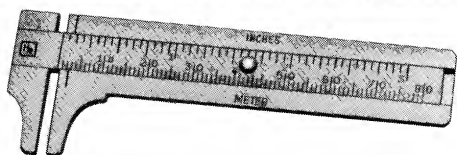


No.	Capacity	Price
24-481	0 to 15mm, by 0.01mm	\$22.50

**HELIOS SLIDING GAUGE**

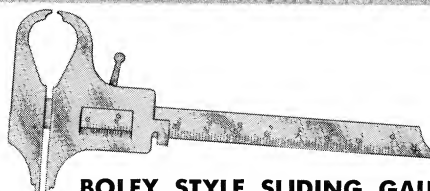
A combined inch and mm gauge with vernier readings to 1/128" and 0.1mm. Capacity 5" or 120mm. Glass hard jaws for measuring inside or outside, and slide for depth. Has thumb roller and locking lever, and can be operated with one hand. Nickel plated, complete with leather case.

No.	Measuring Capacity	Price
24-660	0 to 5", by 1/128" and 0 to 120mm, by 0.1mm	\$8.75

**POCKET SLIDING GAUGES**

Small combination inch and mm gauges that fit easily in the pocket. No. 24-601 is made of brass and aluminum, No. 24-602 of German Silver.

No.	Size	Measuring Capacity	Price
24-601	3¾" x 1"	0 to 3", by 1/6" and 0 to 80mm, by 1.0mm	\$2.70
24-602	2¾" x 7/8"	0 to 2¼", by 1/6" and 0 to 60mm, by 1.0mm	3.25

**BOLEY STYLE SLIDING GAUGES**

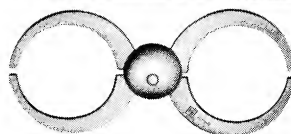
Pocket sized millimeter gauges with vernier readings to 0.1mm, and ends that can be used as a depth gauge. Have locking levers and cut-out jaws to measure many different shapes. No. 24-640G is of first quality West German manufacture.

No.	Measuring Capacity	Price
24-640G	0 to 100mm, by 0.1mm	\$6.65
24-640		4.30

**COLUMBUS SLIDING GAUGE**

With vernier readings to 1/128" and 0.1mm. Has inside and outside jaws and slide for depth. Thumb roller and screw tightening device for locking in measurements.

No.	Measuring Capacity	Price
24-666	0 to 6", by 1/128" and 0 to 150mm, by 0.1mm	\$2.95

**BRASS CALIPERS**

Double-ended so that comparative measurements can be made. Because it is inexpensive it can be adapted to other uses, such as a proportional gauge.

No.	Length	Price
16-001	3¼"	\$1.40

**FLEXIBLE 6" RULES**

No. 24-560—is stainless steel.

No. 24-551—is non-glare chrome stainless steel.

No. 24-561—is plastic and widely used in the optical field.

No.	Measuring Capacity	Each
24-550	0 to 6", by 16ths 0 to 15mm, by 10ths	\$0.30
24-551	0 to 6", by 10ths, 100ths, 32nds, 64ths	1.10
24-561	0 to 6", by 16ths 0 to 15mm, by 10ths	.70

**STUBS STEEL WIRE GAUGE**

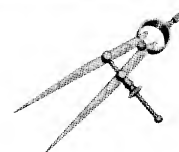
Measures wire diameters according to Stubs Table of sizes. Rectangular plate (5" x 1½"), has holes from 1 thru 80.

No.	Stubs Sizes	Price
24-680	1 thru 80	\$6.75

**B&S WIRE GAUGE**

Sizes are equivalent to American Standard Wire Gauge. Can also be used to measure thickness of metal plate. Diameter 3¾". Decimal equivalents on back.

No.	B&S Sizes	Price
24-688	0 thru 36	\$5.25

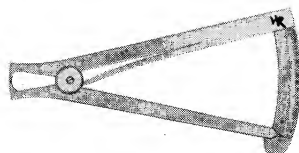
**DIVIDERS**

Spring dividers for making comparative measurements and scribing circles or arcs.

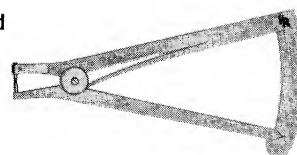
No.	Radius	Price
19-513	3"	\$2.90
19-514	4"	3.10

DEGREE GAUGES

Lightweight, sensitive gauges made of polished steel with easy-to-read brass indexes.

**PLAIN POINTS**

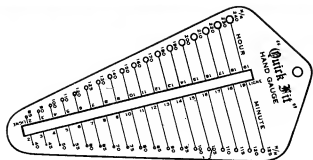
No.	Style	Price
24-007	By 1/12 Ligne	\$2.25
24-009	By 1/5mm	2.25
24-009½	By 1/10mm	2.25
24-018	By 1/12 Ligne and 1/10mm	3.50

**ADJUSTABLE POINTS**

Adjustable points for close tolerance work.

No.	Style	Price
24-045	By 1/5mm	\$3.50
24-050	By 1/10mm	3.50

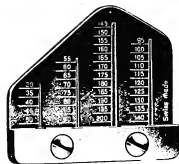
GAUGES AND GLASS CUTTERS



HAND GAUGE

Measures the length of watch hands and diameters of cannon pinions and hour wheels.

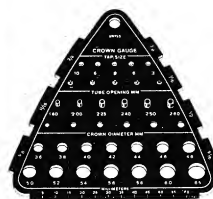
No.	Length	Each
24-070	3 3/4"	\$0.60



HAND GAUGE

Measures hole sizes of hands without removing dial, hour wheel and cannon pinion.

No.	Description	Each
24-072	Calibrated in mm	\$3.95

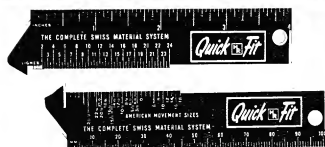


CROWN GAUGE

Measures the tap size, tube opening, and diameter of any crown that needs replacing. Can be used with either sample crown or case to be fitted.

Has spring bar gauge and mm scale on edges.

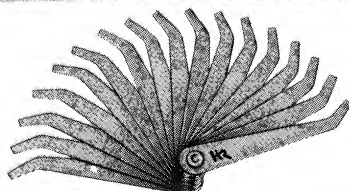
No.	Size	Each
24-080	3" Triangle	\$3.95



MOVEMENT GAUGE

Measures lignes, American watch sizes, inches and millimeters. Hook on end makes it easy to measure movements and leaves inch gauge free for measuring cases for spring bars.

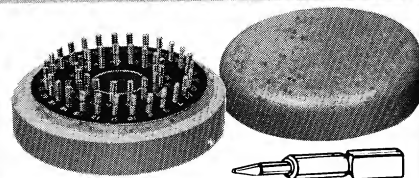
No.	Length	Each
24-095	4 1/2"	\$0.45



ROLLER & PALLET JEWEL GAUGE

Measures roller jewel slot in pallet fork or pallet jewel setting. Needles range in size from 28/100mm to 60/100mm.

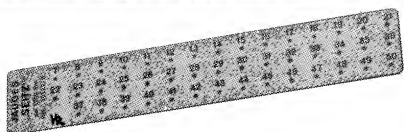
No.	Capacity	Each
24-212	28/100mm to 60/100mm	\$1.95



JEWEL HOLE GAUGE

Set of 44 cylindrical steel plugs for measuring jewel holes. Come in hardwood stand with index.

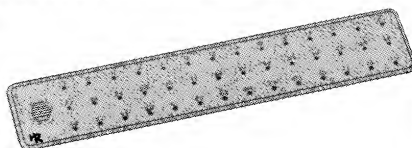
No.	Capacity	Set
24-210	0.07mm to 0.50mm	\$17.65



PIVOT GAUGES

Have actual jewels set metal plates marked with hole sizes...pivots are tried in jewels to determine diameter. Capacity 0.07mm to 0.50mm. Comes in leather cases.

No.	Holes	Sizes	Each
24-402	44	By 0.01mm	\$16.50
24-403	87	By 0.005mm	28.00



PIVOT GAUGE

Has actual jewels set in metal plate that is marked with hole sizes. Capacity 0.07mm to 0.20mm by 0.01mm; and 0.20mm to 0.76mm by 0.02mm. Comes in leather case.

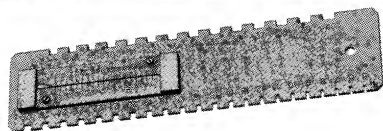
No.	Holes	Capacity	Each
24-423	42	0.07mm to 0.76mm	\$9.75



PIVOT GAUGE

Shows diameter of pivot and reference number of both KWM reamer and bushing. Capacity 0.1mm to 4.8mm as follows: 0.1mm to 0.6mm by 0.05mm; 0.6mm to 3.0mm by 0.1mm; and 3.0mm to 4.8mm by 0.2mm.

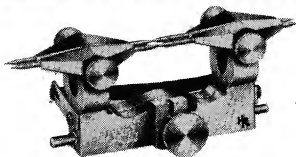
No.	Capacity	Price
24-412	0.1mm to 4.8mm	\$9.20



MAINSRING GAUGE

Slots on edges measure mainspring widths, with thickness (strength) gauge mounted in center.

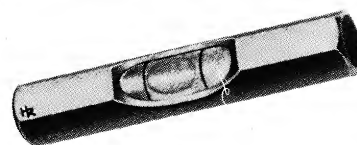
No.	Calibration	Each
24-305	Dennison & Metric	\$5.95



DEPTHENING TOOL

Used to determine proper distance between centers of watch wheels, depths of gearing, checking wheels for roundness.

No.	Description	Each
19-321	In Fitted Case	\$18.00



LEVEL

Small, economical level, in lightweight metal holder, for use with poising tools and similar devices.

No.	Length	Each
31-932	2 1/2"	\$1.75

GLASS CUTTERS



CIRCULAR

Cuts circles from 2" to 12" in diameter. Cutting wheel is set at end of graduated adjustable arm.

No.	Capacity	Each
24-978	2" to 12"	\$5.20



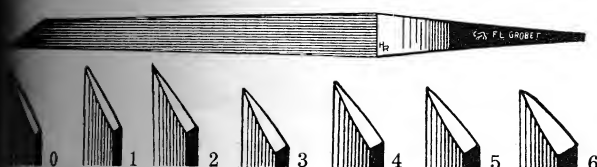
REGULAR HAND

Has turret head with wheel cutters which are used one by one until they are worn out.

No.	Length	Each
24-979	5 1/2"	\$0.85

GROBET GRAVERS

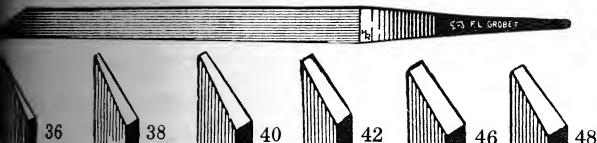
Made of special alloy steel which is melted and rolled just for gravers. Can be used on all kinds of metals as well as wood, bone, ivory, onyx, etc. Used by engravers, stone setters, die sinkers, jewelers and watchmakers.



ANGLETTE

No.	Sizes Available	Each
25-415	00 thru 6	\$0.60

Specify Order No. and Size, when ordering.



FLAT

No.	Sizes Available	Each
25-445	36 thru 45 46 thru 49	\$0.60 .70

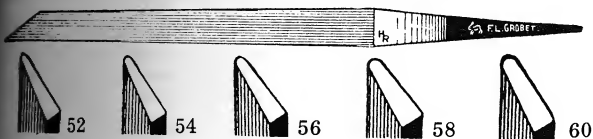
Specify Order No. and Size, when ordering.



LOZENGE

No.	Sizes Available	Each
25-475	1 thru 8	\$0.60

Specify Order No. and Size, when ordering.



ROUND

No.	Sizes Available	Each
25-535	50 thru 59 60 thru 63	\$0.60 .70

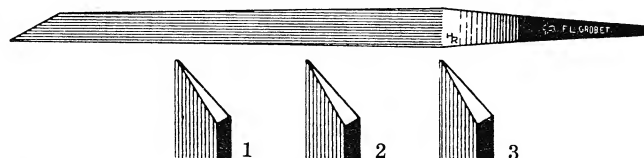
Specify Order No. and Size, when ordering.



CHISEL

No.	Sizes Available	Each
25-435	1 and 2 3	\$0.60 .70

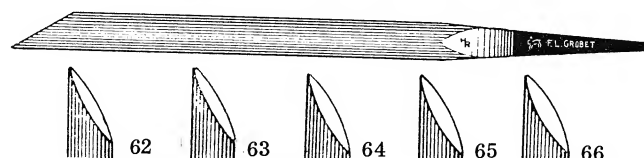
Specify Order No. and Size, when ordering.



KNIFE

No.	Sizes Available	Each
25-465	1 thru 3	\$0.60

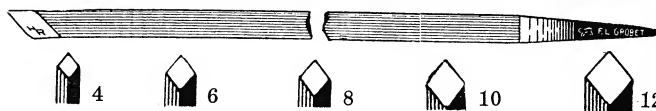
Specify Order No. and Size, when ordering.



OVAL

No.	Sizes Available	Each
25-515	62 thru 66	\$0.60

Specify Order No. and Size, when ordering.



SQUARE

No.	Sizes Available	Each
25-555	0 thru 8 9 thru 12	\$0.60 .70

Specify Order No. and Size, when ordering.



TAPER SQUARE

No.	Sizes Available	Each
25-565	68 thru 71	\$0.60

Specify Order No. and Size, when ordering.



STRAIGHT LINING

No.	Widths	Lines	Each
25-615	6,8,10,12,16&20	2,3,4,5,6,8&10	\$1.35

Consult chart and then specify: Order No., Width, and Number of Lines, when ordering.



BENT LINING

No.	Widths	Lines	Each
25-625	6,8,10&12	2,3,4,5,6,8&10	\$1.45

Consult chart and then specify: Order No., Width, and Number of Lines, when ordering.

Nos	8	10	12
2 lines			
4			
6			
8			
10			



LINING GRAVERS
TABLE OF SIZES

Widths	No. of Lines
6 & 8	2
	3
	4
	5
	6
	8
10 & 12	10
	4
	6
16	8
	10
	4
	6
20	8
	10

X-REFERENCE:
Handles Page 49

GRAVERS

E.F.B. GRAVERS

Made of the finest tool steel, sharpened and ready for use. Famous for their pattern and special shape. Overall lengths approximately 3 7/8".



SET IN LEATHERETTE CASE

Set of 6 of the most popular sizes (1, 3, 40, 41, 121 and 154) with handles in a felt lined leatherette case. Points are sharpened ready for use.

No.	Description	Set
25-832	Set of 6 with handles	\$14.95

HANDLES

Made of finely finished hardwood. Graver slips into groove of handle and is held securely by metal guard.

No.	Description	Set
27-520	Four Double End Gravers	\$0.90
27-525	For Single End Gravers	1.00

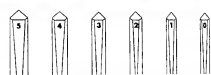
SEPARATE SIZES ... Each \$1.15



MISSMAN GRAVERS

Single end gravers, correctly shaped with sharpened points, permanently mounted in finished hardwood handles with metal ferrules.

No.	Size	No.	Size	No.	Size
25-201		25-205R		25-205L	
25-202		Right	Inside	Left	Inside
25-203		Ring	Ring		
25-204					
25-206					



SET OF TURNING GRAVERS

Designed primarily for lathe work ... for turning, pivoting, etc., on small precision watchmaker's lathe. Made of the finest quality tool steel with accurately finished ground points.

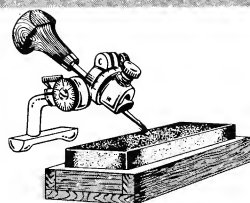
No.	Description	Set
25-830	Set of 6	\$4.40



"OUR OWN" GRAVER

Single end graver with bent shape for engraving holloware. Has sharpened point and is permanently mounted in hardwood handle with metal ferrule.

No.	Length	Each
25-281	4 1/2"	\$1.15



GRAVER SHARPENER

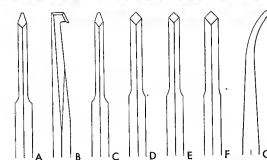
Crocker pattern sharpener. Graver can be set at any angle by turning index. Can also be used for precision screwdrivers.

No.	Description	Each
25-942	Nickel Plated	\$7.95

SEPARATE SIZES ... Each \$1.15

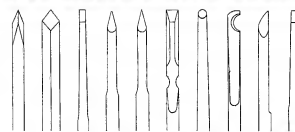
Order No.	E. F. B. No.	Cutting Ends Illustrated Full Size
25-001	1	
25-002	2	
25-003	3	
25-005	5	
25-007	7	
25-008	8	
25-038	38	Single End
25-039	39	Single End
25-040	40	Single End
25-041	41	Single End
25-042	42	Single End
25-121	121	Single End
25-154	154	Single End Right Hand
25-155	155	Single End Left Hand

SET OF TURNING AND PIVOTING GRAVERS



Ideal for use on a lathe. Two set screws hold graver rigid to prevent rocking or chattering, also so that graver can be moved in or out of its nickel plated socket as required. Points are sharpened for immediate use and handle is of the finest hardwood. Set comes in felt lined leatherette case.

No.	Description	Set
25-835	Set of 7	\$8.50

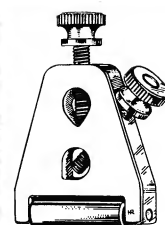


SET OF OHIO TURNING GRAVERS



Ten turning gravers made of fine tool steel, sharpened for immediate use and individually fitted with wood handles and metal ferrules.

No.	Length	Description	Set
25-838	5 1/8"	Set of 10	\$7.95



GRAVER SHARPENER

Economical, well made precision tool with two angle openings for gravers so they may be set at different angles while rolling over oil stone.

No.	Size	Each
25-943	2 1/8" x 1 1/8"	\$3.75

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



CARBIDE GRAVER SET

For polishing, honing, shaving, heavy cutting, etc. Kit contains a metal handle, detachable double-end graver bit, diamond charged wheel for sharpening gravers, and a silicon carbide wheel for reshaping gravers.

No.	Description	Set
25-840	Complete as described	\$39.95

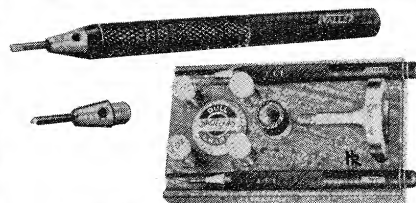
LAPS

Have $\frac{3}{8}$ " arbors and diameters of 2 inches.

No.	Type	Thick.	Each
44-401	Diamond Charged	$\frac{3}{8}$ "	\$34.95
44-402	Silicon Carbide	$\frac{3}{8}$ "	1.50

GRAVER BITS

No.	Description	Each
25-248	Double-End	\$1.90



WALLER CARBIDE GRAVER

Noted for the extreme hardness of the cutting edge. Beryllium coated tip responds instantly to the slightest pressure.

No.	Description	Each
25-251	Handle and Graver Bit	\$2.25
25-252	Graver Bit Only	1.65

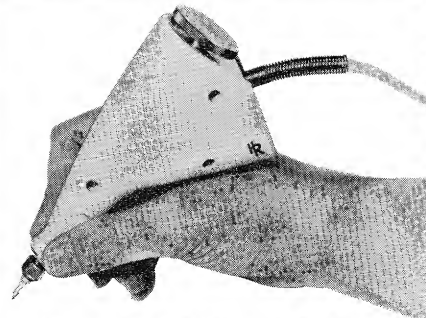
SET IN HARDWOOD FITTED STAND

Contains two complete gravers with two extra graver bits, lap wheel for lathe, diamond compound, dry lube, and roller for applying diamond compound to lap.

No.	Description	Set
25-861	WW Pattern Lap Chuck	\$14.95
25-861 1/2	Moseley Pattern Lap Chuck	14.95

LAPS

No.	Description	Each
44 404	WW Pattern Arbor	\$8.95
44-404 1/2	Moseley Pattern Arbor	8.95



BURGESS VIBRO-GRAVER

As easy to use as a pencil. Engraves electrically on steel, glass, plastic, wood, brass, copper, ceramics, or any hard or semi-hard material. The Burgess Vibro-Graver has a stroke adjuster to control the depth of the cut and the width of the line being etched. It operates on 110-115 volt, 60 cycle AC current, with on-off switch. May be operated a long time without heating or tiring the hand.

No.	Description	Price
25-875	With Tantalum Carbide Tip	\$12.95

ACCESSORIES

No.	Description	Each
25-876	Carbide Tip Only	\$2.00
25-877	Diamond Tip Only	7.50

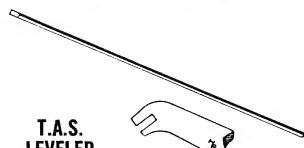
HAIRSPRING TOOLS



COLLET WRENCH

For adjusting beat without removing balance from movement. Also for removing collets.

No.	Length	Each
26-003	3"	\$0.85



T.A.S. LEVELER

For straightening and leveling hairspring in movement. Reaches places inaccessible to tweezers.

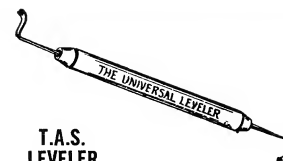
No.	Length	Each
26-015	3 1/2"	\$0.80



K&D COLLET REMOVERS

Has slightly curved fork end for easy collet removal. Tempered jaws, and knurled chromed handles.

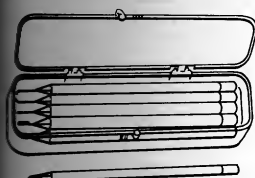
No.	Size	Each
26-019	Regular	\$1.10
26-019B	Bracelet	1.10



T.A.S. LEVELER

Double end tool for straightening and leveling all hairspring sizes.

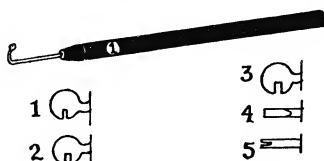
No.	Length	Each
26-020	3"	\$1.30



SET OF TOOLS

Contains collet wrench, 2 regulator pin openers, needle, untangler and reflector. For all size watches... steel points and lucite handles.

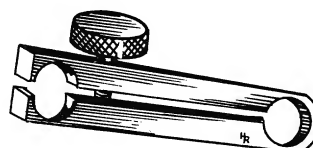
No.	Description	Set
26-027 1/2	In Plastic Box	\$3.25



SET OF TOOLS

Contains 3 levelers, wedge for opening regular pins and slotted tool for straightening kinks in overcoil and making bends.

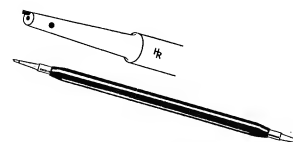
No.	Description	Set
26-030	Set of 5	\$3.50



COLLET CLOSER

Tightens collets that fit loosely on balance staff. Also useful for holding hairspring while working on it.

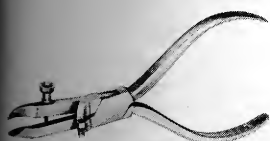
No.	Length	Each
26-032	2 3/8"	\$4.75



SET OF TOOLS

Double ended, one acts as pusher for hairspring collets while wedge-end enables you to turn collet while putting balance in beat.

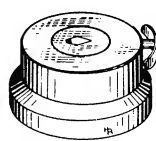
No.	Description	Set
26-038	Set of 3	\$2.75



HAIRSPRING STUD AND COLLET PLIERS

Center jaws are made to fit under hairspring collets; side jaws have pin for removing studs.

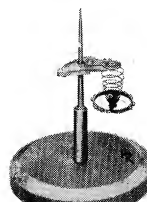
No.	Length	Each
37-025	5"	\$5.95



STUD TABLE

Holds stud in upright position to allow hairspring to be easily attached. Also useful for holding hairspring while working on it.

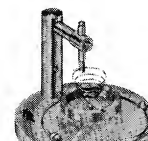
No.	Dia.	Each
26-034	1 1/8"	\$4.75



BALANCE TACK

Holds bridge with balance attached for putting it in beat. Also useful when undercutting screws or adding washers.

No.	Height	Each
26-036	1 1/2"	\$1.20

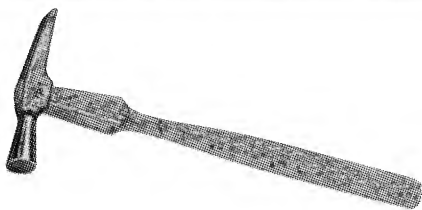


VIBRATOR

Economical model with master balance that vibrates 18,000 beats per hour. A quick accurate check.

No.	Size	Each
26-106	1 1/4" x 1 1/2"	\$14.95

HAMMERS AND MALLETS



SWISS STYLE HAMMERS

Watchmakers' style hammer especially useful in staking tool work. Heads are made of polished steel with tempered face and pein. Handles are of selected hardwood.

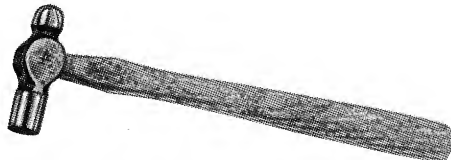
No.	Head Length	Each
WITH HANDLES		
26-640	2"	\$1.75
26-643	2 1/4"	1.80
26-646	2 5/8"	1.85
26-650	3"	2.00
HEADS ONLY		
26-620	2"	1.25
26-623	2 1/4"	1.30
26-626	2 5/8"	1.35
26-630	3"	1.50



RIVETTING HAMMER

Made of steel with tempered face and pein, and polished head. Weight of head 2 oz.

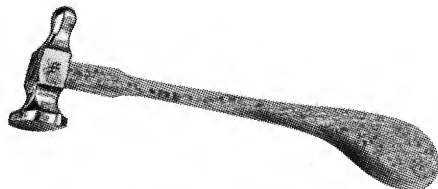
No.	Head	Each
26-330	3" Long	\$1.85



BALL PEIN HAMMER

Can be used to remove dents or make impressions in metal as well as general shop work. Steel heads are mounted firmly on hardwood handles.

No.	Head	Each
26-302	2" Long, Wt. 2 oz.	\$2.00
26-304	2 5/8" Long, Wt. 4 oz.	
26-308	3 1/4" Long, Wt. 8 oz.	

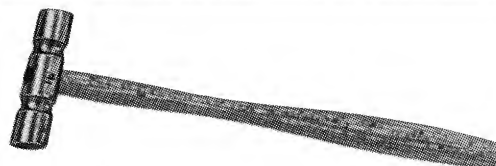


CHASER HAMMERS

With flat and round faces designed for silversmiths and other engaged in arts and crafts. Made of polished steel with tempered face and pein. Handles are of selected hardwood.

Note: Round handles will be supplied unless otherwise specified... see Page 49 for styles of Chasing Handles.

No.	Face Dia.	Each
WITH HANDLES		
26-425	1 5/8"	\$3.55
26-429	1 3/8"	3.80
26-433	1 1/4"	4.55
HEADS ONLY		
26-424	1 5/8"	\$2.75
26-428	1 3/8"	3.00
26-432	1 1/4"	3.75



K&D BRASS HEAD Mallet

For use on staking tool punches and similar items where it is necessary to protect the striking area from damage. Handle is balanced and has just the right amount of spring.

No.	Head	Each
26-491	2" Long, Wt. 2 oz.	\$1.40

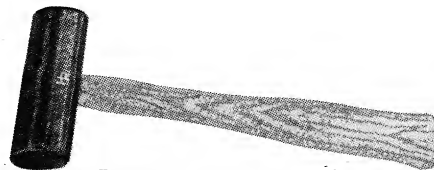


K&D MALLETS WITH DETACHABLE FACES

Have threaded heads to permit removal and replacement of worn or damaged faces... Brass, Nylon or Fiber. Faces will not mar or injure work. Handles are of selected hardwood and a wrench to remove or tighten faces is included.

No.	Style	Head	Price
26-492	Brass-Fiber	2" Long, Wt. 2 1/2 oz.	\$1.95
26-492N	Brass-Nylon	2" Long, Wt. 2 1/2 oz.	2.30
26-493	Brass-Fiber	2 5/8" Long, Wt. 5 oz.	2.30
26-493N	Brass-Nylon	2 5/8" Long, Wt. 5 oz.	2.60

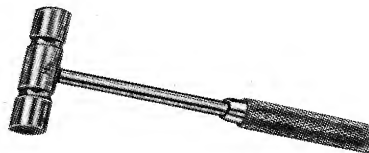
Faces: Brass and Fiber 20c each... Nylon 40c each.



RAWHIDE MALLETS

For metalworking where it is necessary not to mark or injure the work and for similar hammering jobs. Made of the finest quality rawhide with a heavy coat of shellac. Attached to selected hardwood handles.

No.	Face Dia.	Head	Each
26-400	1"	2 1/8" Long, Wt. 1 1/2 oz.	\$1.55
26-401	1 1/4"	2 3/4" Long, Wt. 3 1/2 oz.	1.80
26-402	1 1/2"	3" Long, Wt. 6 oz.	2.10
26-403	1 3/4"	3 1/8" Long, Wt. 7 1/2 oz.	2.85
26-404	2"	3 1/4" Long, Wt. 10 oz.	3.00



BRASS HEAD Mallet

Small, overall length approximately 6", economical mallet that will not damage the striking area. Handle is made of metal.

No.	Head	Each
26-497	1 5/8" Long	\$1.10



BOXWOOD Mallet

For straightening, flattening and forming metal in jewelry making... will not mar or injure the metal. Overall length approximately 10 1/2".

No.	Face Dia.	Head	Each
26-451	1 3/8"	2 3/8" Long	\$0.95

HAN

For holding
wood handle

No.
27-059

End of handle
taper spindle
on arbors. L

No.
27-062

Preferred by
tools. Suppl

No.
27-063

For setting
handle is b
comfortably
chucks with

No.
27-064

For holding
tools, bro

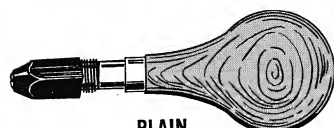
No.
27-467

No.
27-301

No.
27-305

PRICES SUB

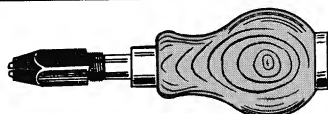
HANDLES WITH CHUCKS



PLAIN

For holding beading, chasing tools, etc. Round wood handle has square metal chuck. Length 3".

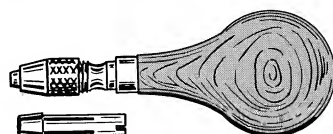
No.	Chuck Capacity	Each
27-059	.085" to .128"	\$1.10



FOR TAPER SPINDLE

End of handle is bored and reinforced to fit on taper spindles. Useful for holding small wheels on arbors. Length 3 1/4".

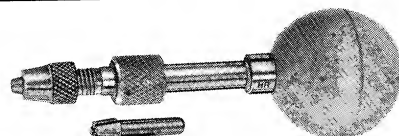
No.	Chuck Capacity	Each
27-062	.085" to .128"	\$1.10



ROUND WITH 2 CHUCKS

Preferred by some to hold beading and chasing tools. Supplied with two chucks. Length 3".

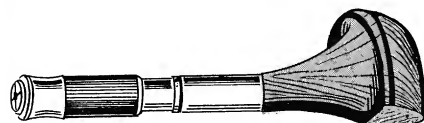
No.	Chuck Capacities	Set
27-063	0 to .128"	\$1.10



SWIVEL TOOL HANDLE

For setting, reaming, tapping, etc. Swivel handle is ball shaped, made of wood, and fits comfortably in palm of hand. Has two screw chucks with a capacity of 0 to .089".

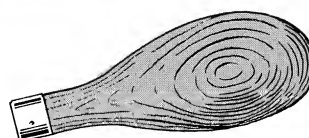
No.	O. L.	Price
27-064	4"	\$1.30



GRAVER, ETC.

For holding gravers, beading and millgrain tools, broaches, etc. Length 3 1/4".

No.	Chuck Capacity	Each
27-467	.085" to .128"	\$1.10



BEADING TOOL HANDLE

Round hardwood handle with a metal ferrule that can be attached to a variety of tools.

No.	Length	Doz.
27-070	2 1/2"	\$1.75



FILE AND BURNISHER HANDLE

Hardwood handle with metal ferrule 1/2" in diameter.

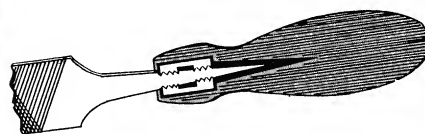
No.	O. L.	Dozen
27-150	3 3/4"	\$2.25



FILE HANDLES

Natural finished hardwood handles with metal ferrules.

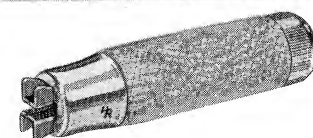
No.	Length	Dia.	Dozen
27-108	3"	3/16"	\$1.60
27-120	3"	7/16"	
27-109	3 1/2"	3/8"	
27-109 1/2	4"	1/2"	
27-110	4"	5/16"	
27-111	4"	5/8"	
27-112	4"	3/4"	



SKROO-ZON FILE HANDLES

Steel die inside wood handle cuts its own thread on file tang.

No.	Description	Each
27-193	For Small Files	\$0.25
27-194	For 4" Files	.25
27-195	For 5" Files	.30
27-196	For 6" Files	.30



ADJUSTABLE FILE HANDLE

Has self-equalizing parallel jaws (1 3/4" deep) for gripping tang handles, files, hacksaw blades, reamers, knife blades, etc. Metal parts made of steel with hardwood handle and knurled knob for positive locking.

No.	Length	Dia.	Price
27-191	5"	1 1/4"	\$1.05



HAMMER HANDLES

Selected hardwood handles for the Swiss Style Hammers on the preceding page.

No.	Length	Each
27-601	8 3/4"	\$0.35
27-602	9"	.35
27-603	9 1/4"	.35



CHASING HAMMER HANDLES

Rugged hardwood handles that fit all sizes of chasing hammer heads... see page 48. Length approximately 10".

No.	Shape	Each
27-637	Oval	\$0.75
27-647	Pistol	.85
27-657	Round	.65



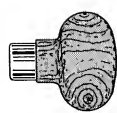
E.F.B. GRAVER HANDLES

Made of finely finished hardwood. Graver slips into groove of handle and is held securely by metal guard.

No.	Description	Set
27-520	For Double End Gravers	\$0.90
27-525	For Single End Gravers	1.00

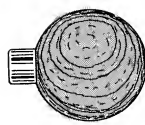
GRAVER HANDLES

Natural finished hardwood with metal ferrules.



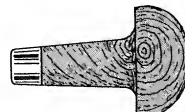
PEAR

No.	Size	Doz.
27-301	1 3/8"x1"	\$1.75



ROUND

No.	Size	Doz.
27-301 1/2	1 5/8"x1 3/8"	\$1.75



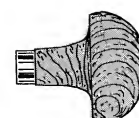
MUSHROOM

No.	Size	Doz.
27-302	2"x1 1/4"	\$1.75



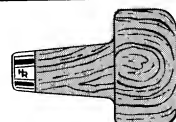
PEAR

No.	Size	Doz.
27-303	1 7/8"x1 3/8"	\$1.75



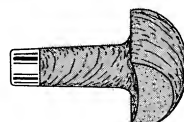
MUSHROOM

No.	Size	Doz.
27-304	1 1/2"x1 1/4"	\$1.75



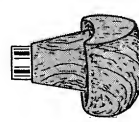
MUSHROOM

No.	Size	Doz.
27-305	1 3/4"x1 1/4"	\$1.75



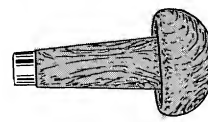
HALF HEAD... LONG

No.	Size	Doz.
27-309	2"x1 1/4"	\$1.75



HALF HEAD... SHORT

No.	Size	Doz.
27-309 1/2	1 1/2"x1 1/4"	\$1.75



MUSHROOM

No.	Size	Doz.
27-358	2 1/4"x1 1/4"	\$1.75



OVAL

No.	Size	Doz.
27-374	1"x1 1/4"	\$1.75

JEWELING TOOLS

SEITZ JEWELING TOOLS

Used for friction jewel setting in watchmaking and similar precision instruments. The frame and attachments can also be used to close hand holes, stake pallet arbors, etc. Tool designed and manufactured by the famous maker of Seitz Friction Jewels.

CONTENTS OF THE VARIOUS SETS

No.	Description	Set Nos.		
		28-035	28-026	28-020
—	Jewelry stake and 28mm platform stake	•	•	•
—	Set of Micrometrical Anvil, Pusher and Bushnut	•	•	•
28-101	Hand Setting Tools	•		
28-102	12 Pump Pushers	•	•	
28-103	Face Plate with 3 clamps	•		
28-105	Holder and Brass Setting Set	•		
28-107	Concave Jewel Pusher Set	•	•	
28-108	Hole Closing Punch Set	•	•	
28-109	Self Centering Point Set	•		
28-110	Reamers with handle, Set	•	•	•
28-112	Pallet Arbor Tool Set	•	•	
28-113	Grinding Stone	•		
28-115	Centering Pump Pusher	•		
28-119	Flat Pusher Set	•	•	•
28-120	Anvil Set	•		•
28-121	Cannon Pinion Tool Set	•	•	
28-122	Hand Hole Closing Set	•	•	
24-402	Pivot Gauge	•		
35-514	Pivot Straightening Tool	•		
48-106	Chuck Holder and 3 Chucks	•		

Note: See below for illustration and description of attachments.

SETS

No.	Name	Case	Set
28-035	Deluxe	Hardwood, fitted	\$185.25
28-026	Standard	Covered wood, felt lined	79.50
28-020	Starter	Covered wood, felt lined	59.25

Nos. 28-020
and 28-026



JEWELING TOOL ATTACHMENTS



FLAT PUSHERS
Set of 12

No.	Set
28-119	\$3.50



PUMP PUSHERS
Set of 12

No.	Set
28-102	\$11.25



CONCAVE PUSHERS
Set of 11

No.	Set
28-107	\$4.00



SET OF REAMERS
Set of 15, with handle

No.	Set
28-110	\$11.25



HOLE CLOSING PUNCHES
Set of 4 to reduce holes in plates

No.	Set
28-108	\$2.25



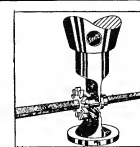
PALLET ARBOR TOOLS
Set of 2 punches and 1 anvil for staking pallet arbors

No.	Set
28-112	\$1.75



SET OF ANVILS
Set of 4

No.	Set
28-120	\$4.25



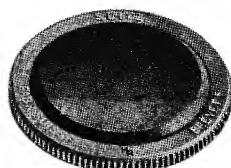
CANNON PINION TOOLS
Set of 1 punch and 1 stump for closing cannon pinions

No.	Set
28-121	\$1.75



HAND HOLE CLOSERS
Set of 4 punches to close hour hand holes accurately

No.	Set
28-122	\$2.00



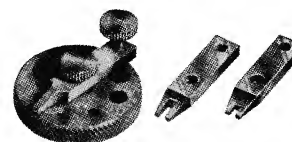
GRINDING STONE
For refinishing worn pushers and anvils

No.	Each
28-113	\$6.00



CENTERING PUMP PUSHER
Fits base of jewelry frame to center hole in plate

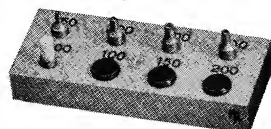
No.	Each
28-115	\$0.75



FACE PLATES
Used to hold tiny bridges, settings, etc., while setting jewels in them.

No.	Description	Set
28-103	With 3 Clamps	\$7.25
28-104	With 4 Clamps	8.25

HAND SETTING TOOLS



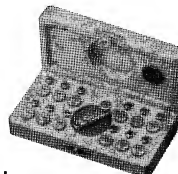
For installing watch and indicator hands. Set has 1 fiber and 4 brass pushers, with 3 steel anvils that hold minute wheel pivots.

No.	Description	Set
28-101	Mounted on plastic block	\$3.50

HOLDER FOR BRASS SETTINGS

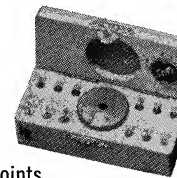
For setting friction jewels in brass settings. Contains 6 ea. brass settings in aluminum capsules for the 12 assorted chucks, and face plate with clamp. In fitted wood case.

No.	Chuck and Settings Sizes	Set
28-105	1.0 to 3.0mm	\$30.00



SELF CENTERING POINTS

Automatically centers jewels over plate holes and holds them in position until jewel is set. Contains face plate that fits base of jewelry frame and 12 different points



No.	Description	Set
28-109	In fitted wood case	\$17.25



BALANCE



JEWEL

Designed with and cap jewel absorbers, to collecting and

No.
47-393



Set of 44 cylinder jewel holes. Index.

No.
24-210



CO

Has special jewels while ing jewels and as an operates sp

No.
28-680

No. 28-781

HOROL ADJUST

Can be used or left pallet screws or h

No.
28-781
28-782



SEITZ FRICTION JEWELS

The exact same jewels that are used in the manufacture of high quality precision watch and instrument movements. Made of the best synthetic ruby with microscopic surface irregularities reduced to the absolute minimum to reduce friction and wear and gauged and shaped to precision tolerances. All genuine Seitz jewels are packaged in distinctive cellophane envelopes.



BALANCE



PLATE



CAP



CENTER

X-REFERENCE: Staking Tool Pages 102 to 105 for other jewelry attachments.



K&D CONE MILLER

For removing burs from jewel settings. Fits all K&D frames. Length 3 1/8".

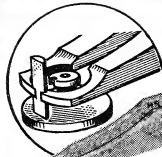
No.	Tip Dia.	Each
43-130	.115"	\$1.00



JEWEL HOLDING TWEEZERS

Designed with grooved jaws to hold balance and cap jewels of incabloc and other shock absorbers, to pick-up and hold jewels, and for colletting and studding hairsprings.

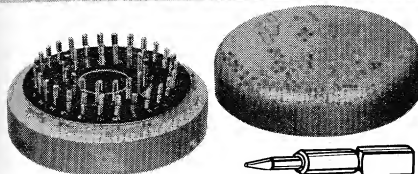
No.	Length	Each
47-393	4 1/4"	\$2.80



ROLLER JEWEL SETTING TWEEZER

Slotted points for picking up roller jewel and setting in table. Can be passed through flame to melt shellac.

No.	Length	Size	Each
47-391	3 1/4"	Pocket Watch	\$3.75
47-392	3 1/4"	Bracelet Watch	3.75



JEWEL HOLE GAUGE

Set of 44 cylindrical steel plugs for measuring jewel holes. Come in hardwood stand with index.

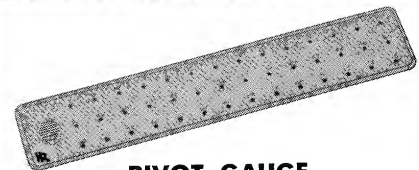
No.	Capacity	Set
24-210	0.07mm to 0.50mm	\$17.65



PIVOT GAUGES

Have actual jewels set metal plates marked with hole sizes... pivots are tried in jewels to determine diameter. Capacity 0.07mm to 0.50mm. Comes in leather cases.

No.	Holes	Sizes	Each
24-402	44	By 0.01mm	\$16.50
24-403	87	By 0.005mm	28.00



PIVOT GAUGE

Has actual jewels set in metal plate that is marked with hole sizes. Capacity 0.07mm to 0.20mm by 0.01mm; and 0.20mm to 0.76mm by 0.02mm. Comes in leather case.

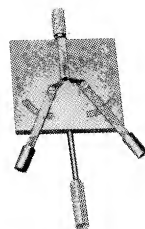
No.	Holes	Capacity	Each
24-423	42	0.07mm to 0.76mm	\$9.75



COMBINATION TOOL

Has special slots in jaws for setting roller jewels while roller is still on balance; for holding jewels and hands; for setting pallet jewels; and as an annealing tool. Plunger in handle operates spring tension jaws.

No.	Length	Each
28-660	3 3/4"	\$1.85



GASTON PALLET STONE SETTER

Holds all sizes of pallets while setting and adjusting pallet stones. Levers set right or left pallet stones separately and have finely spaced guide lines for minute adjustments. Can also be used to set roller jewels.

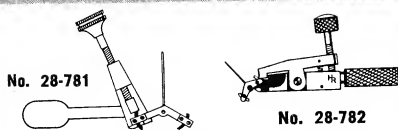
No.	Dimensions	Each
28-729	3 1/2"x1 1/8"	\$3.35



PALLET STONE SETTER

For resetting and cementing loose pallet stones. Spring arm holds pallet in place on the slotted steel table by means of a free running collar. Has wood handle.

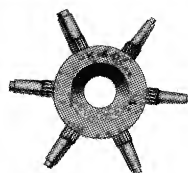
No.	Length	Each
28-731	4 7/8"	\$2.40



HOROLOVAR 400-DAY CLOCK ADJUSTABLE PALLET SETTER

Can be used to raise or lower either the right or left pallets without loosening the holding screws or harming the pallet.

No.	Description	Each
28-781	Standard	\$2.95
28-782	Miniature	2.95



K&D JEWEL PUSHER

For removing old jewel settings and pushing in new settings. Six different size pushers mounted on metal center.

No.	Diameter	Each
28-844	2 1/8"	\$2.30



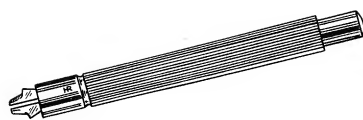
JEWEL BEZEL OPENERS AND CLOSERS

Sets of three double end tools for opening and closing bezel when removing and replacing broken jewels.

No.	Size	Set
28-919	Pocket Watch	\$4.00
28-929	Bracelet Watch	4.00

KEYS AND KNIVES

KEYS



ADJUSTABLE

A universal regulating key for bench use. Plunger top adjusts opening in square jaws.

No.	Length	Each
29-020	3"	\$1.65



K&D WATCH

Double end bench keys for regular stem wind watches . . . in sets of three with knurled chromium handles.

No.	Size	Set
29-063	Pocket Watch	\$2.00
29-063B	Bracelet Watch	2.00



REGULATING AND WINDING

For use on key wind watches and for regulating fast and slow in some clocks.

No.	Sizes	Each
29-025	3(1.9mm), 4(1.8mm) 5(1.7mm), 6(1.6mm) 7(1.5mm), 8(1.4mm), 9(1.3mm)	\$0.25

Specify Order No. and Size when ordering.

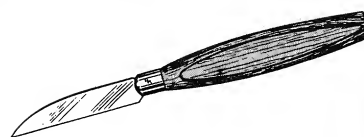


CLOCK

Double end bench keys for letting down and winding clock spring. Hardwood handles provide a firm grip. Nos. 28-110/111 are for 400-Day clocks.

No.	Description	Price
29-105	Sizes 4, 6, 7 & 10	\$3.00 set
29-110	Standard & Miniature (6-10)	1.50 ea.
29-111	Midget (2 1/2-3 1/2)	1.50 ea.

BENCH KNIVES



K&D

Tempered steel blade holds its keen edge and is firmly anchored in a black enameled handle reinforced by a metal ferrule. Handle is non-rolling with blade 1 3/4" long.

No.	Length	Each
29-598	5"	\$1.35



HEAVY DUTY

Has thick steel 1 3/4" blade for general use. Blade is anchored firmly in a black enameled hardwood handle reinforced by a metal ferrule.

No.	Length	Each
29-505	5 3/4"	\$1.00

X-ACTO KNIVES

A wide variety of detachable precision blades with handles for Deburring, Stripping, Cutting, Trimming, Shaping, Repairing and Cleaning a wide variety of metals, leathers, plastics, etc.



No. 1

For light to medium work. Has aluminum handle 5/16" in diameter and No. 11 blade.

No.	Length	Each
29-701	5"	\$0.60

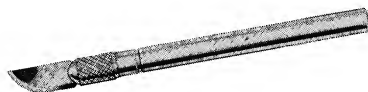
Note: Blade Nos. 10, 11, 16 & 17, are for use with knives Nos. 29-701 and 701G.



No. 1SGK SAFETY GUARD

For light to medium work similar to the No. 1. No. 11 blade is retractable into a see-thru plastic shield by means of a special chuck. Will not roll on bench.

No.	Length	Each
29-701G	5 1/4"	\$1.00



No. 2

For medium to heavy work. Has aluminum handle 7/16" in diameter and No. 22 blade.

No.	Length	Each
29-702	5"	\$0.75



No. 2SGK SAFETY GUARD

For medium to heavy work similar to the No. 2. No. 22 blade is retractable into a see-thru plastic shield by means of a special chuck. Will not roll on bench.

No.	Length	Each
29-702G	5 1/4"	\$1.25

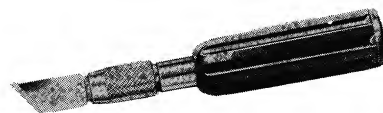
Note: Blade Nos. 18, 19, 22 & 24, are for use with knives Nos. 29-702 and 702G.



No. 3ST PEN-KNIFE

For light to medium work. Screw-on see-thru plastic cap has pocket clip. Has gold finished metal barrel with No. 10 blade (Blade Nos. 11 and 16 will also fit this handle).

No.	Length	Each
29-703	5 1/4" closed	\$1.00



No. 5

For heavy duty work. Has thick (7/8" diameter) plastic handle with metal blade lock and No. 19 blade (Blade Nos. 18, 19, 22 & 24 and Razor Saws Nos. 34 & 35 will also fit this handle).

No.	Length	Each
29-705	5 1/2"	\$1.20

REPLACEMENT BLADES

Extra blades are available in assortments or packages of one of a kind. Packs contain 5 blades.



No. 10—General Cutting and carving.



No. 16—Notching, etching, scoring, etc.



No. 18—1/2" chisel for deep cross cuts.



No. 22—General Cutting and Carving.



No. 11—Fine angle cutting, solder shaving, etc.



No. 17—1/4" chisel for narrow cuts.



No. 19—Deburring, rough shaping, chiseling.



No. 24—Close corner cutting, stripping.

Assortment of 5 blades

No.	Description	Ass't.
29-711	For Handle Nos. 1, 1SGK, 3ST	\$0.60
29-712G	For Handle Nos. 2, 2SGK, 5	.60

Separate sizes in packs of 5 blades

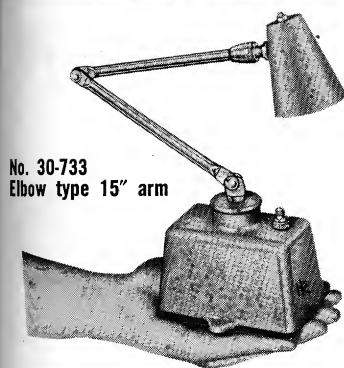
Nos.	Description	Pack
10, 11, 16, 17	For Handle Nos. 1, 1SGK, 3ST	\$0.60
18, 19, 22, 24	For Handle Nos. 2, 2SGK, 5	.60



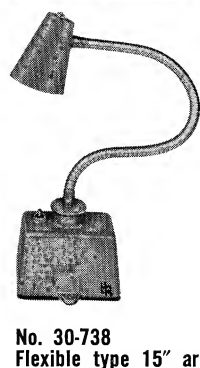
RAZOR SAW BLADES

For hairline cutting of balsa, brass, butyrate, etc. Fits No. 5 handle.

No.	Dimensions	Each
34	4 1/2" x 3/4"	\$0.40
35	4 1/2" x 1"	.45



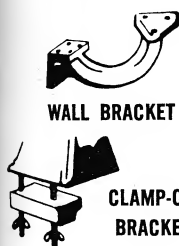
No. 30-733
Elbow type 15" arm



No. 30-738
Flexible type 15" arm

HI-INTENSITY LAMPS

With durable G.E. bulb that lasts approximately 1,000 hours and provides brilliant, glare free, pure white light (150 foot candles... the equivalent of daylight) to reveal fine details, three-dimensional perspective, and color identification, in all types of exacting work. The lamps operate on normal household current (110 Volt AC), do not use a transformer and are free from humming. The whole unit is small and light enough to fit in the palm of the hand and yet will not tip over when the arm is extended parallel to the base.



WALL BRACKET

CLAMP-ON BRACKET

ACCESSORIES:

Two types of clamps are available for mounting lamp when it is impracticable to attach base to a work bench by the use of screws.

Wall Bracket — for mounting on wall or any surface that is not horizontal. Add suffix "W" to order number (i.e. No. 30-733W) and \$2.00 to price of the lamp.

Clamp-on Bracket — for mounting on table, desk or bench. Add suffix "C" to order number (i.e. No. 30-733C) and 75¢ to price of the lamp.

No.	Style	Colors		Price
		Base & Shade	Arm	
30-733	Elbow	Tan	Brass	\$11.25
30-734	Elbow	Grey	Chrome	11.25
30-738	Flexible	Tan	Brass	9.50
30-739	Flexible	Grey	Chrome	9.50



LIGHT DIFFUSER

For glare-free, shadow-free, easy-to-work-with light.

No.	Price
30-710	\$1.35

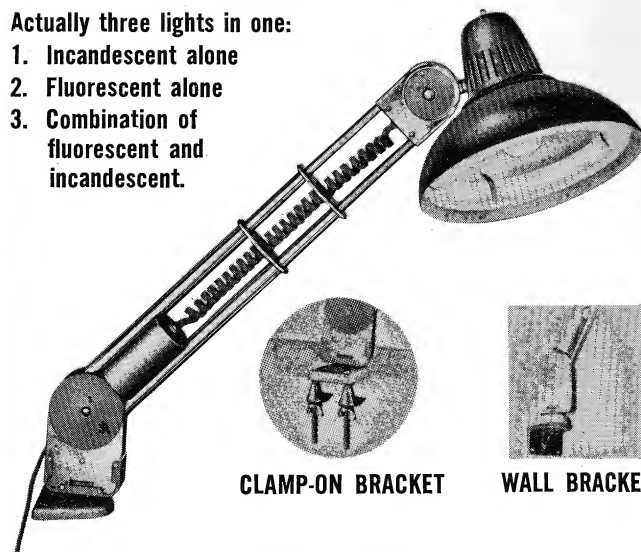
BENCH LIGHT

Provides a steady cool light instantly over a wide work area. The interior of its 19" shade has been white enameled to provide the maximum reflection of the two 15 watt standard fluorescent tubes. Counter balance action of the arm gives complete control of the lighting position. A wide double-bolt bench clamp fastens it securely to the bench.

No.	Color	Model	Price
30-701	Grey	without fluorescent tubes	\$21.80
30-702	Brown	without fluorescent tubes	21.80
30-706	Brown	with tubes and base outlet	26.00
30-707	Grey	with tubes and base outlet	26.00

Actually three lights in one:

1. Incandescent alone
2. Fluorescent alone
3. Combination of fluorescent and incandescent.



CLAMP-ON BRACKET

WALL BRACKET

BENCH LIGHT

Adjusts to any position and stays put... arm rotates 360°, locks at a touch, and tilts from vertical to horizontal (25° when retracted, 39° extended). Reflector has ventilating louvers and will tilt and swivel to any needed angle. Comes complete with 60W incandescent lamp, 22W Circline fluorescent tube, and bracket. **Specify:** either clamp-on-bracket (for securing to edge of bench) or wall bracket... Color (choice of Sahara Tan — Executive Grey — Tropic Green — Trombolite Blue).

No.	Color	Bracket	Price
30-721	Specify	Specify	\$33.70



INSPECTION LIGHT

For detailed examination and assembly of precision work. Highly polished double convex lens 5" in diameter with a focal length of 13" is combined with a 22W T9 circline fluorescent tube and mounted on the same type arm as No. 30-721 above.

No.	Color	Bracket	Price
30-724	Grey	Clamp-on	\$46.75

DUAL-LIGHT

Has both fluorescent and incandescent lighting, in a vented reflector that can be used separately or in combination. A feather touch is all that is needed to focus the light where it is wanted. Of sturdy construction, arms are made of steel with strong nickel steel tension springs. Comes complete with 75W bulb and 22W circline tube, convenience outlet in base and a wide double-bolt bench clamp.

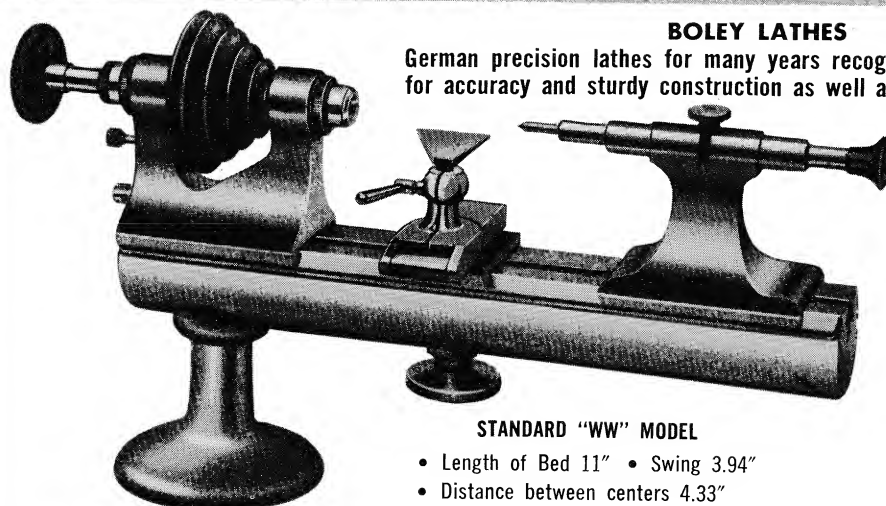
No.	Color	Price
30-708	Brown	\$31.75
30-709	Grey	31.75

INSPECTION LIGHT

For detailed examination and assembly of precision work. Has a 22W shadow free fluorescent tube circling a 5" diameter magnifying lens with a 13" focus. Lens is mounted on same type arm as No. 30-708 above, with a wide double-bolt clamp to fasten it to the bench.

No.	Color	Price
30-704	Grey	\$39.40





BOLEY LATHES

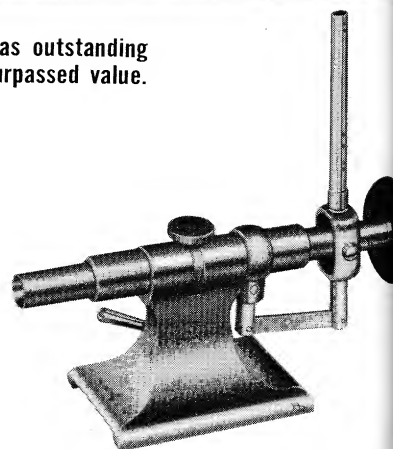
German precision lathes for many years recognized as outstanding for accuracy and sturdy construction as well as unsurpassed value.

STANDARD "WW" MODEL

- Length of Bed 11" • Swing 3.94"
- Distance between centers 4.33"

With tip-over T-rest, hardened steel cone bearings, and plain tailstock. Takes all standard "WW" attachments. Comes complete with 8 assorted wire chucks (collets), 1 screw chuck, 6 cement brasses, 1 taper chuck, male and female tapers, and belting all packed in wood chuck box.

No.	Description	Set
31-040	With plain tailstock	\$214.50
31-041	With chuck holding tailstock	223.50

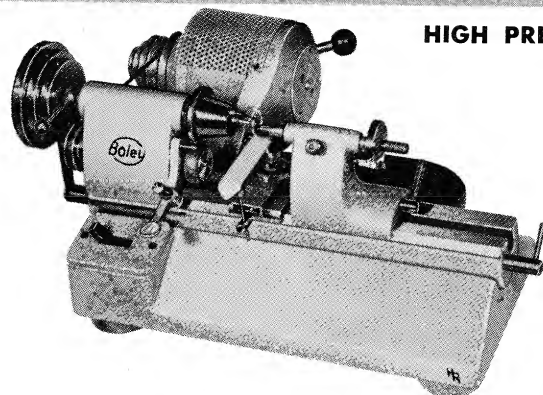


CHUCK HOLDING TAILSTOCK

Above photo shows the chuck (collet) holding tailstock supplied with Boley Lathe No. 31-040 with optional lever feed No. 31-668.

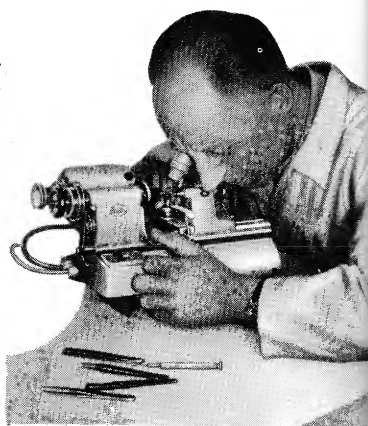
ACCESSORIES

No.	Description	Each
31-666	Chuck Holding Tailstock	\$39.00
31-668	Lever Feed Only	21.00



HIGH PRECISION INSTRUMENT AND WATCHMAKERS LATHE

The most complete and easy-to-use lathe ever designed for instrument making. The lathe and motor are mounted on a heavy base as a complete unit and do not have to be attached to a bench. Has two tailstocks and attachments so outfit can be used as a turning lathe or a pivoting lathe.



A wrist-rest is mounted on the base to steady the right hand while using a hand graver while the left hand rests on the bench and controls the speed by means of a contact lever. The bed of the lathe may be tilted to any angle to vary the distance between the wrist-rest and the graver-rest to suit any method of working. All the following features are also included in the price of the lathe:

- Headstock—the spindle may be driven either by direct belt drive for regular chuck work, or by indirect friction drive for turning even the finest pivots between centers.
- Interchangeable tailstocks—either regular concentric tailstock or eccentric style for use with runner bearings (3 provided with lathe) when turning pivots.
- Motor—smooth running 110 volt AC or DC with "on and off" switch and separate reversing switch. Can be swiveled for use with endless belt.
- Tip-over hand-rest—with small and large "T's".
- Compound slide rest—standard 2 slided "WW" pattern.
- Taper chuck—with male and female tapers.
- Takes all standard "WW" accessories.

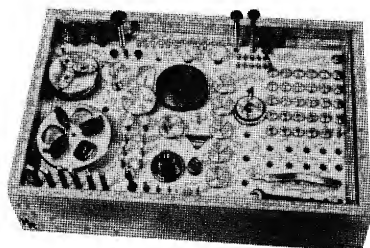
No.	Description	Set
31-047	Complete with accessories listed above	\$608.00

SET OF LATHE ACCESSORIES

This set can be used with any of the above Boley lathes. Consists of the following items in fitted wood case with hinged cover.

- Universal 3-jaw chuck with reversible jaws.
- Set of 5 work carriers (driving dogs).
- Hollow runner for tailstock, with drill-holder and two drilling discs; also long ejector pin.
- Set of 12 sinkers for fine watch work; consisting of 2 male centres, 6 female centres and 4 pivot guards.
- Universal runner with centering and drilling pin, set of 10 drill-holders from 0.6 to 1.5 mm, and one centering and drilling disc with 20 counter-sunk holes.
- Hardened disc for centering and drilling pivots with 15 holes.
- Jacot pivot drum with notches for clock pivots ranging from 0.25 to 1.3 mm.
- Saw table to fit hand rest.
- Filing rest (single roller) to fit into hand rest.
- Set of 8 chucks with reinforced heads, sizes from 6 mm to 14 mm, for holding large parts such as crowns, etc.
- Carrier chuck (dog face or driving plate) with male and female centres and adjustable carrier pin.
- Large shellac chuck, 38 mm diameter.
- Female centre chuck to hold such accessories as rose cutters, sinkers, etc.
- Saw arbor chuck complete with saw 30 mm diameter, and key.
- Wood polishing lap, 60 mm diameter, mounted on solid arbor.
- Milling arbor chuck with milling cutter.
- Set of 6 slide rest cutters, high speed steel.

No.	Description	Set
31-048	Set comes in fitted wood case with cover	\$476.00



- Set of 28 wire chucks (collets) ranging from No. 3 to No. 50.
- Set of 5 wheel chucks (collets), with step diameters ranging from 5.6 to 23.2 mm.
- Set of 5 ring chucks (collets), with step diameters ranging from 5.6 to 25.2 mm.
- Cement chuck with 8 brasses (one each 14 mm and 18 mm diameter, and six 7 mm diameter).
- Mandrel face plate with three adjustable clamps.



For individual piece hand operated plan

No.
31-043



For series and motor lever collet attached and the headstock.

No.
31-044

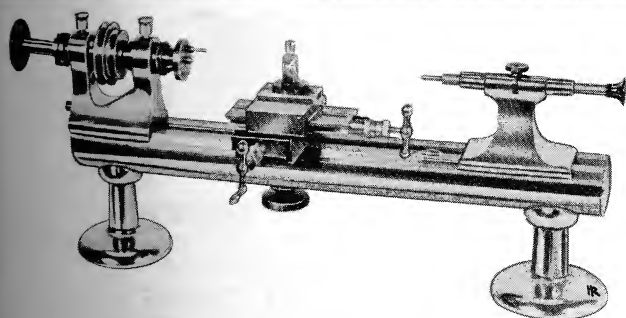


For series and motor lever collet attached to a built-on electric feed Tailstock to a single-direction

No.
31-045
31-045R

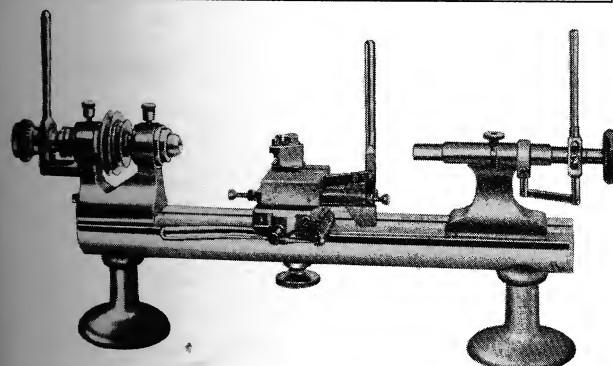
Heavy duty foot For use with lathe motor (for direct current) mounted on with large rubber

No.
31-108



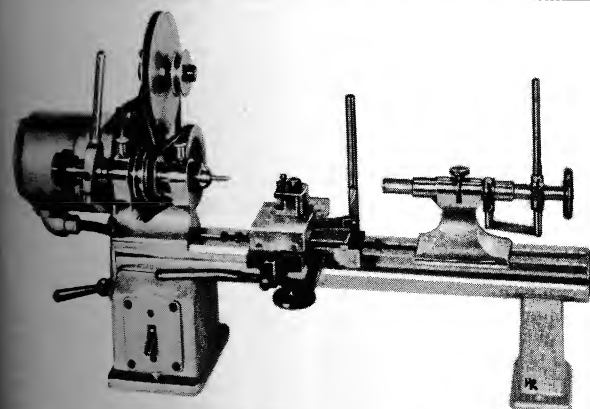
For individual-piece work — Has handwheel operated collet attachment; hand operated plain Tailstock; crank operated Cross Slide; and hand rest.

No.	Description	Each
31-043	Consult Specification Column	\$308.00



For series and mass-production work — Quick action chucking by hand lever collet attachment while lathe is running. Cross Slide is lever operated and the lever feed Tailstock takes the same collets as the headstock.

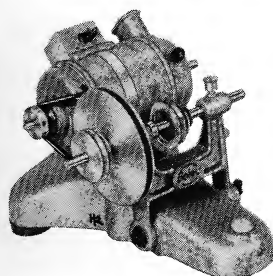
No.	Description	Each
31-044	Consult Specification Column	\$382.00



For series and mass-production work — Quick action chucking by hand lever collet attachment while lathe is running. Headstock is connected to a built-on electric motor. Cross Slide is lever operated and the lever feed Tailstock takes the same collets as the headstock. No. 31-045 has a single-direction drive motor. No. 31-045R has a reversible drive motor.

No.	Description	Each
31-045	Consult Specification Column	\$584.00
31-045R		652.00

Heavy duty foot operated motor — For use with lathes. Has a universal motor (for direct or alternating current) mounted on a cast iron base with large rubber feet.



No.	Description	Each
31-108	110 Volt, A.C. or D.C.	\$228.00

BOLEY INSTRUMENT LATHES

Small lathes for precision turning necessary to produce small, reliable parts for instruments, watches, clocks, meters and other miniature, sub-miniature and microminiature units and components. Every lathe is factory tested and will take standard "WW" attachments.

SPECIFICATIONS

HEADSTOCK

All models have high-quality alloy steel spindle running in plain cylindrical diamond-bored bushes. Spindle has been hardened, ground and lapped for sustained accuracy and long life. Pulleys are grooved, two-step and made of a high quality steel.

(1) No. 31-043 — Collet attachment fitted in the hollow spindle; collet operation by hand-wheel when spindle is stationary.

(2) Nos. 31-044/045/045R — Quick action chucking by hand lever collet attachment while lathe is running.

TAILSTOCK

Hardened and ground with knurled locking nut for tailstock spindle. Tailstock is clamped to bed by means of eccentric lever and T-groove bolt.

(1) No. 31-043 — Hand operated spindle with interchangeable centers.

(2) Nos. 31-044/045/045R — Lever operated tailstock with collet attachment to take some collets as headstock.

CROSS SLIDE

(1) No. 31-043 — Crank operated slide rest for longitudinal and lateral movement. Precision ground lead screws, with indexing from 0° to 70° right or left.

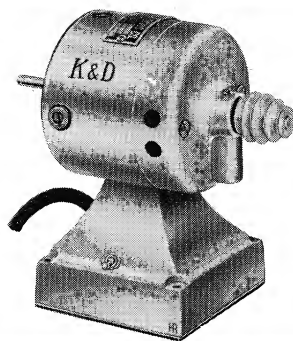
(2) Nos. 31-044/045/045R — Lever operated cross slide for longitudinal and taper turning and surfacing to adjustable stops. Calibrated in degrees. As special equipment, a fixed tool holder block can be fitted to the bottom slide for a second rear tool.

HAND REST

For No. 31-043 only ... hinged top section of rest can be swung back, making component easily accessible and rapidly changed. Clamped to bed by means of pad, screw and hand nut.

TABLE OF MEASUREMENTS AND WEIGHTS

Description	Order Numbers	
	31-043 & 31-044	31-045/045R
Height of centers	50mm — 2"	
Maximum swing over bottom slide	60mm — 2 3/8"	
Distance between centers	200mm — 8"	
Length of bed	400mm — 15 3/4"	
Spindle bore	8mm — .315"	
Through bore of collet	0.2mm to 4.5mm — 1/64" to 3/16"	
Blind bore of collet	4.6mm to 7.0mm — 13/64" to 9/32"	
R.P.M. Spindle speeds with motor No. 31-108	1250, 1600 2000, 2500 3150 & 4000	—
R.P.M. Spindle speeds with built-on motor	—	750, 1500 3000 & 6000
Net Weight	15 1/2 lbs.	29 lbs.
Gross Weight	22 lbs.	57 lbs.



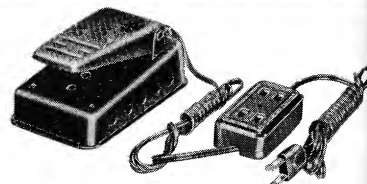
K&D LATHE MOTORS

Powerful, quiet running motor designed especially to run small precision lathes.

SPECIFICATIONS

- 1/15 hp
- 110 volts, AC or DC
- Complete with foot rheostat control, for speeds from 200 to 10,000 rpm
- Reversing switch in base
- Three step cone pulley
- Double end shaft
- Weight 6½ lbs.

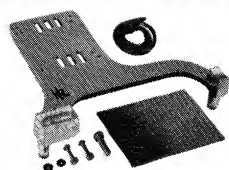
No.	Description	Each
31-105C	Chromium finish	\$43.50
31-105J	Black art-crackle finish	38.25



RHEOSTATS

For speed control of lathe motors. Come complete with wire and plugs.

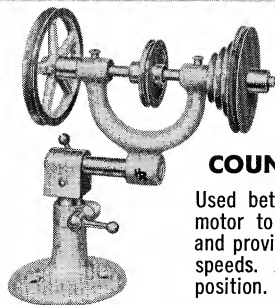
No.	Description	Set
31-134	Standard Model	\$5.20
31-135	K&D Model	6.80



LATHE MOUNT

Lathe and motor can be accommodated to make a complete transportable unit. Made of aluminum and comes complete with sponge rubber mat, rubber feet, mounting bolts, and lathe belting.

No.	Description	Set
31-140	Equipped as listed above	\$5.25



COUNTERSHAFT

Used between lathe and motor to change speeds and provide power at low speeds. Adjusts to any position.

No.	Description	Set
31-148	With 3 Pulleys	\$39.00



IDLER PULLEY

Used to drive accessories such as wheel cutting and grinding attachments. Arm is adjustable and unit can be screwed to the bench between motor and accessories.

No.	Height	Each
31-149	10"	\$25.00

BELTING

For connecting small pulleys on miniature lathes, drill presses, etc.



SPIRAL SPRING

Furnished in 3-foot lengths complete with coupling. Strong, runs smooth and noiselessly.

No.	Diameter	Each
11-130	3/32"	\$0.60

SOLID LEATHER

No.	Diameter	Per Ft.
11-145	1/8"	\$0.30

CHROME LEATHER

No.	Diameter	Per Ft.
11-155	1/8"	\$0.50
11-156	3/32"	.50
11-157	1/4"	.50

PLASTIC FUSIBLE

Ends fuse when heated to form endless belt. Will not crack... unaffected by oil.

No.	Diameter	Per Ft.
11-174	3/32"	\$0.15
11-175	1/8"	.15
11-176	3/32"	.15
11-177	1/4"	.25
11-178	3/32"	.25
11-179	1/4"	.30

BELT HOOKS

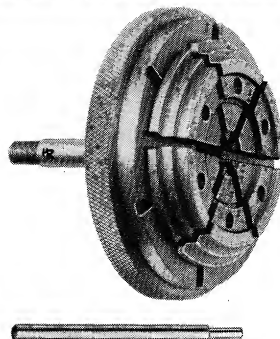
For fastening leather belting. Threaded male and female supplied in each set.

No.	Belt Dia.	Set
11-114	3/16"	\$0.70
11-116	3/32"	.70
11-118	1/8"	.70
11-119	3/32"	.70
11-120	1/4"	.70

FACE PLATES

Has three independent adjustable jaws that may be moved radially to hold plates and objects of various sizes. Pump center helps center work, and large peep holes make it possible to see work from the rear and aid in setting up. Diameter approximately 3½".

No.	Model	Each
31-250	"WW" Pattern	\$35.25
31-251	Moseley Pattern	35.25
31-252	Gen. Boley "WW"	51.00



BEZEL CHUCK

For holding thin discs, rings, etc. The jaws are made for both inside and outside gripping. They are scroll operated and are moved by turning the knurled ring on the chuck. Diameter approximately 2⅞". Come complete with locking wrench.

No.	Model	Each
31-260	"WW" Pattern	\$43.50
31-261	Moseley Pattern	43.50

THREE JAW CHUCKS

Self-centering reversible jaws that can be used to grip work from the inside or outside. Jaws are operated by turning the knurled ring on the chuck. Diameter approximately 2½". Come complete with locking wrench.

No.	Model	Each
31-270	"WW" Pattern	\$49.50
31-271	Moseley Pattern	49.50
31-272	Gen. Boley "WW"	96.00

FOUR JAW CHUCK

Jaws on this chuck work independently so that eccentric or odd shaped pieces may be held, and are moved in-and-out by means of a key. Work can be adjusted to run perfectly true or off-center if desired. Outside diameter 2", maximum chuck capacity 2½".

No.	Model	Each
31-290	"WW" Pattern	\$30.00

Made of the best materials and true to specification.

"WW" PATTERN

Precision collets to fit most jewel lathes and some drill presses. Use No. 31-540 when ordered.

Collet No.	Size (Millimeter)
1	0.10mm
2	0.20mm
3	0.30mm
4	0.40mm
5	0.41mm
6	0.50mm
7	0.60mm
8	0.70mm
9	0.79mm
10	0.80mm
11	0.90mm
12	1.00mm
13	1.10mm
14	1.19mm
15	1.20mm
16	1.30mm
17	1.40mm
18	1.50mm
19	1.59mm
20	1.60mm
21	1.70mm
22	1.80mm
23	1.90mm
24	1.98mm
25	2.00mm
26	2.10mm
27	2.20mm
28	2.30mm
29	2.38mm
30	2.40mm
31	2.50mm
32	2.60mm
33	2.70mm
34	2.78mm
35	2.80mm
36	2.90mm
37	3.00mm
38	3.10mm
39	3.17mm
40	3.20mm
41	3.30mm
42	3.40mm
43	3.50mm
44	3.57mm
45	3.60mm
46	3.70mm
47	3.80mm
48	3.90mm
49	3.97mm
50	4.00mm
51	4.10mm

COLLETS

(wire chucks)

Made of the best hardened steel that has been ground and tapered to assure perfection in size and trueness while running. Bores of all collets are clear through on sizes 1 thru 50 and $\frac{1}{4}$ ".

"WW" PATTERN

Collets in all standard dimensions for most jewelers and some micro presses. Use Order No. 31-540 when ordering.



GENUINE BOLEY "WW" PATTERN

The highest quality precision wire chucks that are manufactured. They are made in West Germany by the Boley factory. Use Order No. 31-560 when ordering.

Size		"WW" 31-540	Boley 31-560
Millimeter	Inch	Each	Each
0.10mm	.0039"	\$4.95	—
0.20mm	.0079"	4.95	\$6.75
0.30mm	.0118"	4.95	6.75
0.40mm	.0156"	—	6.75
0.41mm	.0157"	4.95	6.75
0.50mm	.0197"	3.25	6.75
0.60mm	.0236"	3.25	6.75
0.70mm	.0276"	3.25	6.75
0.79mm	.0313"	—	6.75
0.80mm	.0315"	3.25	6.75
0.90mm	.0354"	3.25	6.75
1.00mm	.0394"	3.25	5.70
1.10mm	.0433"	3.25	5.70
1.19mm	.0469"	—	5.70
1.20mm	.0472"	3.25	5.70
1.30mm	.0512"	3.25	5.70
1.40mm	.0551"	3.25	5.70
1.50mm	.0591"	3.25	5.70
1.59mm	.0625"	—	5.70
1.60mm	.0629"	3.25	5.70
1.70mm	.0669"	3.25	5.70
1.80mm	.0709"	3.25	5.70
1.90mm	.0748"	3.25	5.70
1.98mm	.0781"	—	5.70
2.00mm	.0787"	3.25	5.70
2.10mm	.0826"	3.25	5.70
2.20mm	.0866"	3.25	5.70
2.30mm	.0905"	3.25	5.70
2.38mm	.0938"	—	5.70
2.40mm	.0945"	3.25	5.70
2.50mm	.0984"	3.25	5.70
2.60mm	.1024"	3.25	5.70
2.70mm	.1063"	3.25	5.70
2.78mm	.1093"	—	5.70
2.80mm	.1102"	3.25	5.70
2.90mm	.1142"	3.25	5.70
3.00mm	.1181"	3.25	4.20
3.10mm	.1221"	3.25	4.20
3.17mm	.1250"	—	4.20
3.20mm	.1260"	3.25	4.20
3.30mm	.1299"	3.25	4.20
3.40mm	.1338"	3.25	4.20
3.50mm	.1378"	3.25	4.20
3.57mm	.1406"	—	4.20
3.60mm	.1417"	3.25	4.20
3.70mm	.1456"	3.25	4.20
3.80mm	.1456"	3.25	4.20
3.90mm	.1535"	3.25	4.20
3.97mm	.1563"	—	4.20
4.00mm	.1575"	3.25	4.20
4.10mm	.1614"	3.25	4.20

Collet	Size		"WW" 31-540	Boley 31-560
	No.	Millimeter	Inch	Each
42		4.20mm	.1654"	\$3.25
43		4.30mm	.1693"	3.25
$\frac{1}{4}$ "		4.37mm	.1719"	—
44		4.40mm	.1732"	3.25
45		4.50mm	.1772"	3.25
46		4.60mm	.1811"	3.25
47		4.70mm	.1850"	3.25
$\frac{3}{16}$ "		4.76mm	.1875"	—
48		4.80mm	.1890"	3.25
49		4.90mm	.1929"	3.25
50		5.00mm	.1969"	3.25
51		5.10mm	.2008"	3.25
$\frac{1}{4}$ "		5.16mm	.2031"	—
52		5.20mm	.2047"	3.25
53		5.30mm	.2087"	3.25
54		5.40mm	.2126"	3.25
55		5.50mm	.2165"	3.25
$\frac{1}{2}$ "		5.56mm	.2188"	—
56		5.60mm	.2205"	3.25
57		5.70mm	.2244"	3.25
58		5.80mm	.2283"	3.25
59		5.90mm	.2323"	3.25
$\frac{1}{4}$ "		5.95mm	.2344"	—
60		6.00mm	.2362"	3.25
61		6.10mm	.2401"	3.25
62		6.20mm	.2441"	3.25
63		6.30mm	.2480"	3.25
$\frac{1}{4}$ "		6.35mm	.2500"	—
64		6.40mm	.2520"	3.25
65		6.50mm	.2559"	3.25
66		6.60mm	.2598"	3.25
67		6.70mm	.2638"	3.25
$\frac{1}{4}$ "		6.75mm	.2656"	—
68		6.80mm	.2677"	3.25
69		6.90mm	.2716"	3.25
70		7.00mm	.2756"	3.25
71		7.10mm	.2795"	3.25
$\frac{3}{16}$ "		7.14mm	.2813"	—
72		7.20mm	.2835"	3.25
73		7.30mm	.2874"	3.25
74		7.40mm	.2913"	3.25
75		7.50mm	.2953"	3.25
76		7.60mm	.2992"	3.25
77		7.70mm	.3031"	3.25
78		7.80mm	.3071"	3.25
79		7.90mm	.3110"	3.25
80		8.00mm	.3150"	3.25

MOSELEY PATTERN

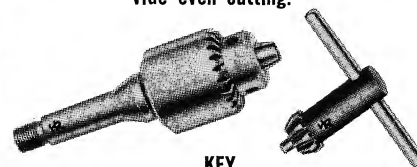
For use with Moseley Lathes only.

No.	Sizes	Each
31-541	1 thru 4	\$5.25
	5 thru 70	3.50

Specify Order No. and Size when ordering.

DRILL CHUCKS

For sensitive, precision drilling. All chucks are carefully made so that drills run true and provide even cutting.



KEY

Regular Jacobs style key chucks. Available in two styles: with mounting arbors to fit small precision lathes, or without arbors for use on micro drill presses and other machinery. All come with keys.

WITH ARBOR CHUCKS

No.	Capacity	Arbor Style	Each
31-390	$\frac{1}{32}$ "	"WW"	\$13.50
31-391		Moseley	13.50
31-400	$\frac{1}{4}$ "	"WW"	11.40
31-401		Moseley	11.40

WITHOUT ARBOR CHUCKS

No.	Capacity	Taper Hole	Each
31-392	$\frac{1}{32}$ "	#0	\$8.80
31-402	$\frac{1}{4}$ "	#1	7.45



KEYLESS

A regular Albrecht keyless chuck to fit collet adapter on precision lathes and micro drill presses. Has #0 taper hole, and is recommended for drill sizes .008" to $\frac{1}{16}$ ".

No.	Capacity	Each
31-395	$\frac{1}{16}$ "	\$16.50



ADAPTOR

Handy for holding drills and other small tools. Fits a No. 24 Wire Chuck and Flexible Shaft handpieces.

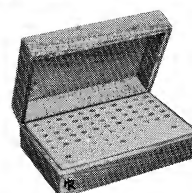
No.	Capacity	Each
31-240	1.15mm	\$0.75
31-241	2.50mm	1.00
31-242	2.90mm	1.10



PIVOT AND TWIST DRILL

Back taper fits into taper chuck or in regular tailstock spindle. Designed to hold pivot drills and very small twist drills.

No.	Style	Capacity	Each
31-410	"WW"	0.90mm	\$4.00
31-411	Moseley	0.90mm	4.00



WOODEN CHUCK BOX

Hinged hardwood box that holds 50 wire chucks (collets), wheel chucks, cement brasses, and tapers.

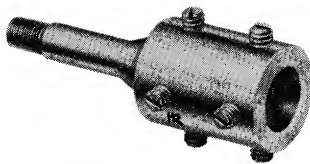
No.	Dimensions	Each
31-699	8" x 5 $\frac{1}{4}$ " x 2 $\frac{3}{4}$ "	\$7.50



ARBOR CHUCKS

For running grinding wheels, circular saws, etc. on precision lathes. No. 31-310 and 311 are stepped arbor with spacer for 1/4" holes. No. 31-312 is 3/16" size Genuine Boley "WW" Pattern for use with milling attachments and comes with locking wrench.

No.	Description	Each
31-310	"WW" Pattern	\$5.75
31-311	Moseley Pattern	5.75
31-312	For Milling Attachment No. 31-690	5.75



JUMBO CHUCK

Useful when turning a piece too large to fit regular wire chucks. Work can be trued or held eccentric by means of eight holding screws.

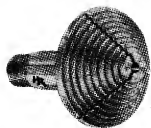
No.	Style	Each
31-440	"WW"	\$5.60



BUFF CHUCKS

For small precision lathes. Used to run small buffs, lead center stones, laps, etc.

No.	Style	Each
31-370	"WW"	\$4.25
31-371	Moseley	4.25

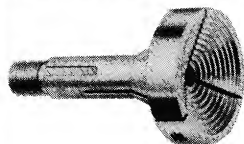


RING CHUCKS

For holding cylindrical objects from the inside. As collet is drawn into headstock the prongs of the chuck expand outward. Come in five sizes (numbered from 1 to 5) and ranging in size from 5.6mm to 25.2mm in increments of 0.4mm.

No.	Style	Each
31-495	Genuine Boley	\$5.40

Specify Order No. and Size when ordering.

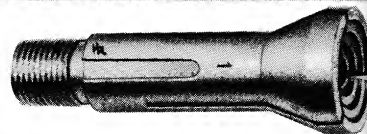


WHEEL CHUCKS

For holding cylindrical objects from the outside. Each chuck has ten different gripping edges and come in five sizes (numbered from 1 to 5), ranging in size from 5.6mm to 23.2mm.

No.	Style	Each
31-500	"WW"	\$3.75
31-501	Moseley	3.75
31-502	Genuine Boley "WW"	5.40

Specify Order No. and Size when ordering.



BRACELET WHEEL CHUCKS

For holding small cylindrical objects from the outside. Chucks come in five sizes (numbered from 1 to 5), ranging in size from 4.0mm to 11.9mm.

No.	Style	Each
31-510	"WW"	\$3.25
31-511	Moseley	3.25

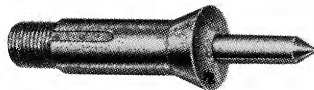
Specify Order No. and Size when ordering.



WOOD LAP

For grinding and polishing. Lap is made of hardwood and mounted on "WW" pattern chuck. Genuine Boley.

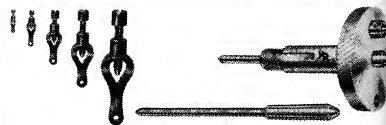
No.	Diameter	Each
31-445	60mm	\$3.90



TAPER CHUCKS

For holding work on centers. Made of carefully tempered steel with finished points.

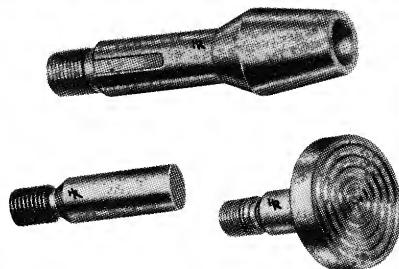
No.	Style	Each
31-470	"WW"	\$2.90
31-471	Moseley	2.90
31-472	Genuine Boley "WW"	3.50



CARRIER CHUCK AND CARRIERS

For work that is to be turned between centers. Comes with male and female centers, ejector pin and 5 carriers (sizes up to 6.0mm). "WW" style.

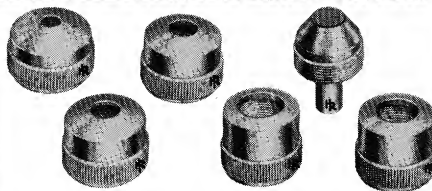
No.	Description	Price
31-257	Carrier Chuck	\$12.00 ea.
31-258	5 Carriers	12.75 set



CEMENT BRASSES AND HOLDING CHUCK

Work can be cemented on to brasses with lathe cement or shellac when not possible or convenient to hold in any other way.

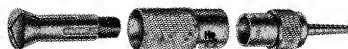
No.	Dia.	Type	Each
CHUCKS			
31-460	—	"WW", Screw Lock	\$2.90
31-461	—	Moseley, Screw Lock	2.90
31-462	—	Gen. Boley, Friction Lock	3.25
CEMENT BRASSES			
31-382	1/4"	Screw Lock	.50
31-383	1/2"		1.50
31-384	3/4"		2.00
31-386	1/4"		1.25
31-387	1/2"	Friction Lock	2.00
31-388	3/4"		2.00



CROWN CHUCKS

For recessing, tapping and cutting down tubes of watch crowns. Set contains 5 caps and one arbor.

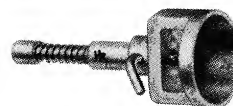
No.	Description	Set
31-350	Fits No. 50 Wire Chuck	\$4.50



TAILSTOCK CHUCK HOLDER

Back taper fits into regular tailstock spindle to convert to chuck holding type.

No.	Type	Each
31-660	"WW"	\$4.50
31-661	Moseley	4.50
31-662	Peerless	4.50



SCHILLING BALANCE CHUCK

Holds balance complete while polishing pivots. Plate is extra-thin so pivot will project enough to polish all the way to the cone. Fits in No. 50 Wire Chuck.

No.	Style	Each
31-236	Bracelet Watches	\$3.95
31-237	Pocket Watches	4.50



STEPPING DEVICE

Goes through a draw-in-spindle and into a wire chuck to provide a seat for thin objects such as jewel settings. Tapered sleeve makes it adaptable for either "WW" or Moseley pattern lathes.

No.	Description	Set
31-650	With 6 Points	\$4.95



Slide rest fits a cutter so it can crank. Lead screw on right or left is shown.

No.	Each
31-840	
31-841	
31-845	

No. 31-690

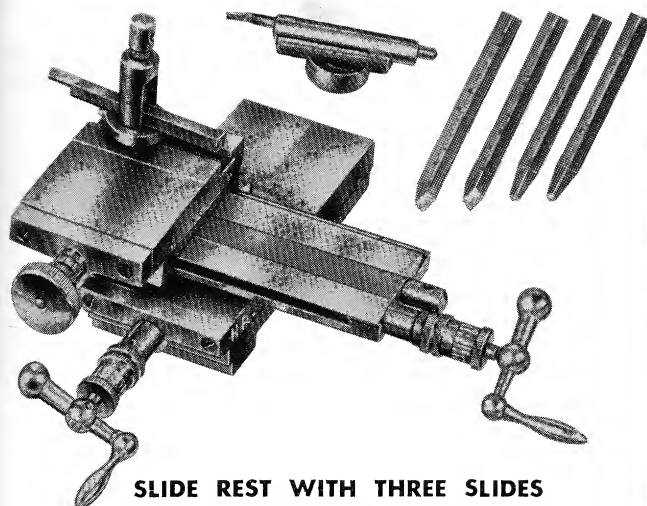
BOLEY TIP HAND R

Hinged so that be tipped back measurement comparison made. Fits most pattern lathes

No.	Each
31-871	
31-872	

Fits into tip support part on lathe.

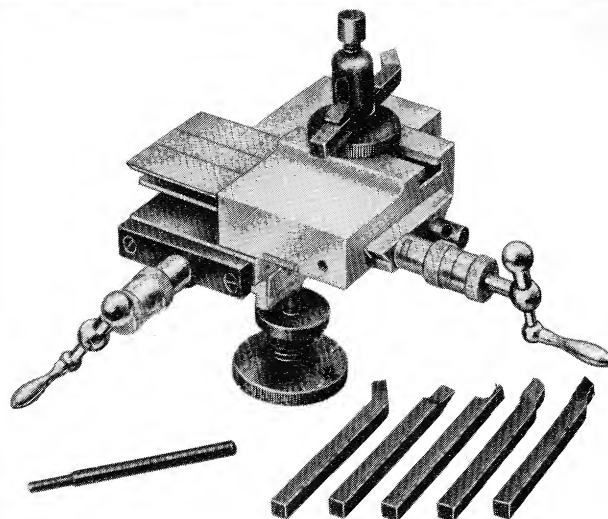
No.	Each
31-877	



SLIDE REST WITH THREE SLIDES

Slide rest fits directly on any standard "WW" pattern lathe bed. Holds cutter so it can be made to move longitudinally or laterally by turning cranks. Lead screws are precision ground. Indexing from 0° to 50° to right or left is provided. Complete with six cutters.

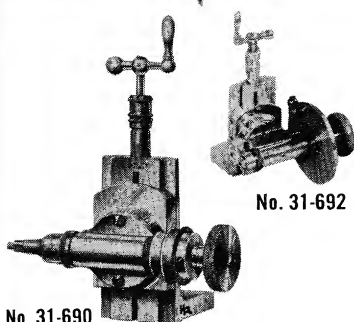
No.	Description	Price
31-640	With Metric Dial Gradations	\$139.50 ea.
31-641	With Inch Dial Gradations	139.50 ea.
31-645	6 Cutting Tools	7.95 set



GENUINE BOLEY SLIDE REST WITH TWO SLIDES

Crank operated slide rest for longitudinal and lateral movement. Precision ground lead screws, with indexing from 0° to 70° right or left. Attaches to lathe bed by means of standard "WW" shoe. Complete with six high speed cutters.

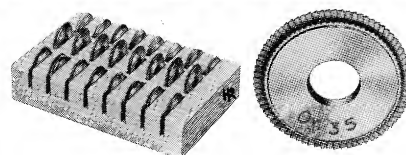
No.	Description	Each
31-642	With Metric Dial Gradations to 5/100mm	\$119.25
31-644	With Inch Dial Gradations to 1/1000"	119.25



GENUINE BOLEY WHEEL CUTTER AND MILLING ATTACHMENT

Converts lathe into small milling machine for milling, drilling, grinding, etc. Cutter head takes standard "WW" chucks and swivels a full 360°. Fits on tool post of slide rest. Model No. 31-692 as illustrated comes complete with 70 mm index plate and latch which has 9 rows of holes providing the following divisions: 54, 60, 64, 68, 70, 72, 80, 84, 90.

No.	Description	Each
31-690	Complete With Arbor Chuck	\$108.00
31-692	Complete With Index Plate	132.00



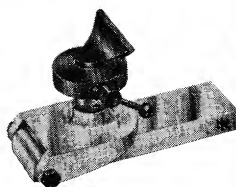
SET OF WHEEL CUTTERS

Set of 24 best sizes for watch work. Consists of 4 wolf teeth, 4 angle (50°, 60°, 70°, 80°), 8 flat single cut, and 8 round double cut cutters. Used with wheel cutting attachments.

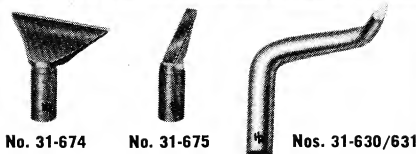
No.	Description	Set
31-695	Set of 24	\$21.00

BOLEY TIP-OVER HAND RESTS

Hinged so that it can be tipped back while measurements or comparisons are made. Fits most "WW" pattern lathes.



No.	Description	Each
31-671	With Shoe and Bolt	\$25.50
31-672	Without Shoe and Bolt	19.50



T AND L RESTS

Act as support for cutting tools. Fits into tip-over hand rest.

No.	Type	Width	Style	Each
31-674	T-rest	27mm	Gen. Boley	\$3.50
31-675	T-rest	4mm	Gen. Boley	3.50
31-630	L-rest	—	"WW"	4.85
31-631	L-rest	—	Moseley	4.85



FILING RESTS

Fit in hand rests and act as support for files and similar hand tools. No. 31-628 has single steel roller, No. 31-629 has two roller with collar for lateral lead and adjustment of height.

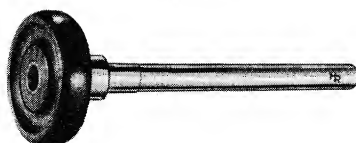
No.	Style	Each
31-628	Genuine Boley	\$ 4.95
31-629	Genuine Boley	15.00



SAW REST

Fits into tip-over hand rest, and is used to support parts when cutting with circular saw on lathe.

No.	Style	Each
31-677	Genuine Boley	\$3.50



REPLACEMENT SPINDLES

Replacement parts for headstock or tailstock of Boley precision lathes.

- (1) Draw-in Spindle for Headstock.
- (2) Draw-in Spindle for Chuck Holding Tailstock.
- (3) Spindle for Plain Tailstock.

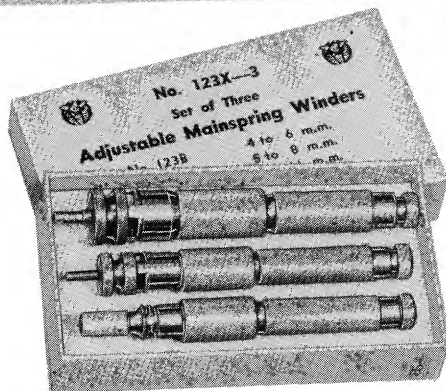


NYE'S LATHE OIL

A special refined machine oil that is non-corrosive, friction reducing and temperature resistant.

No.	Size	Each
51-350	4 oz. Bottle	\$0.50

MAINSRING TOOLS



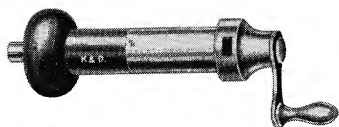
K&D ADJUSTABLE BRACELET WATCH WINDERS

For all sizes of wrist watch mainsprings from **Baguette to 13 Ligne**, with safety hook on arbor to prevent kinking and make it easy to "Back-Off" after the spring is wound. By turning the lower portion of the knurled handle, you can adjust the winder to the exact size of the watch barrel. The push button in the handles pushes the wound mainspring into the watch barrel without distortion. Medium and large sizes have double end arbors, and all are chrome plated.

No.	Size	Each
32-123B	Range 4 to 6mm	\$3.60
32-123	Range 5 to 8mm	3.60
32-123A	Range 8 to 11mm	3.85

SET IN CARDBOARD BOX

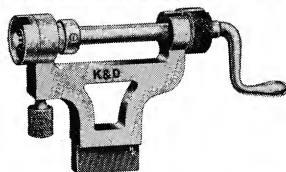
No.	Description	Set
32-123x3	Set of 3 listed above	\$10.95



POCKET WATCH WINDER

Modified Robbins winder that may be held by hand. For all sizes from **7 to 16mm**. Plunger in handle pushes mainspring into barrel without distorting.

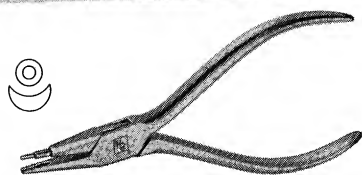
No.	Description	Set
32-126	Comes with 6 barrels	\$6.90



POCKET WATCH WINDER

For all sizes from **7 to 16mm**. Winder can be held in a bench vise and its arbors can be changed by turning the knurled nut on the chromium plated frame.

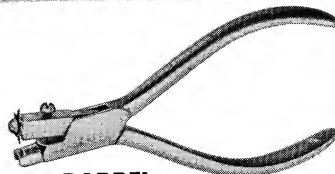
No.	Description	Set
32-128	Has 3 Arbors, 9 Barrels	\$9.90



MAINSRING COILING PLIERS

Shapes the inside coils of watch mainsprings to fit the barrel arbor. Stepped end provides two sizes. Length 4 1/2".

No.	Size	Each
37-091	Regular	\$3.75
37-092	Bracelet	3.75

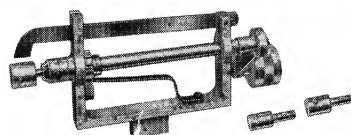


BARREL

HOOK PUNCHING PLIERS

Has turret head with four punches for making hook in mainspring barrels to hold mainspring ends.

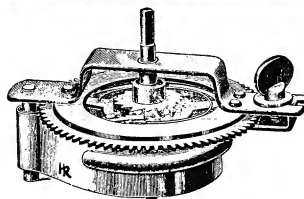
No.	Style	Each
37-167	Pocket Watch	\$8.00
37-168	Bracelet Watch	8.00



CLOCK WINDER

For winding hole end mainsprings. Fits in bench vise, and comes complete with arbors. No. 32-102 is large size, No. 32-101 is small size for 8-day movements.

No.	Description	Set
32-102	With 6 Arbors	\$23.00
32-101	With 3 Arbors	5.25



CLOCK WINDER

For loop end mainsprings. Winds up spring right on main wheel and arbor from clock.

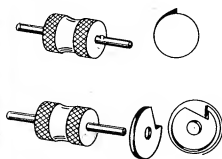
No.	Each
32-105	\$3.25



K&D BRACELET WATCH MAINSPRING WINDERS

Complete set consists of 9 sizes that wind all wrist watch mainsprings from **Baguette to 13 Ligne**. Each has double end arbors and a push button in the handle to push the wound mainspring into the barrel without distorting. Both sets are packed in plastic boxes. The new flanges (see below) for winding automatic bridges will fit on the winding mechanism of this set.

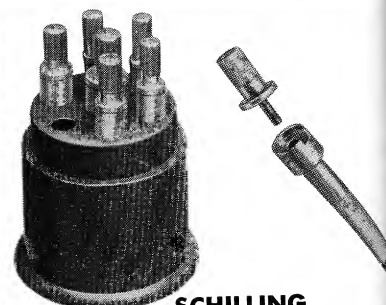
No.	Description	Set
32-117	Complete set of 9	\$11.95
32-118	5 most popular sizes	6.55



FLANGES FOR WINDING AUTOMATIC WATCH BRIDLES

These flanges fit on the arbors of winder set Nos. 32-117/118 so that bridges can be wound like mainsprings without distortion. 5 sizes fit all bridges.

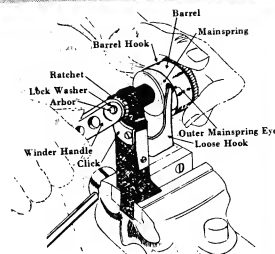
No.	Description	Set
32-119	Set of 5	\$2.50



SCHILLING WATCH MAINSPRING WINDERS

For watch sizes from **Baguette to 13 Ligne**. Barrels are made of one solid piece, with cut out on side for mainspring. Has push-button handle for inserting directly into barrel. No. 32-131, set of 7, comes in a plastic stand.

No.	Description	Set
32-131	Complete Set of 7	\$10.50
32-132	Set of 3 Smallest	5.00
32-133	Set of 3 Largest	5.00



HOROLOVAR 400-DAY CLOCK MAINSPRING WINDER

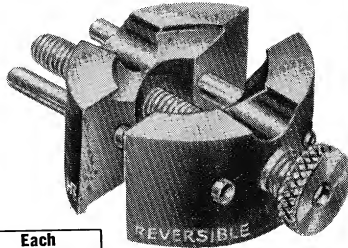
For standard, miniature and midget clocks. Winds left or right hand springs, with safety ratchet to hold wound spring firmly while barrel is being positioned... will not distort coil. Winder arbor releases from inner spring eye without bending coil.

No.	Description	Set
32-107	With 4 Arbors	\$22.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

REVERSIBLE MOVEMENT HOLDER

One side takes the larger wrist and pocket watches up to 18 lignes; the other side takes the smallest watches. Plenty of room for curved plates and clearance for winding stem. Well made, with guide pins to assure perfect alignment of jaws.

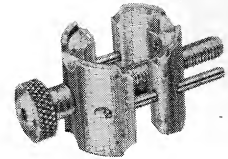


No.	Sizes	Each
33-743½	Baguette to 18 ligne	\$3.00

BAGUETTE

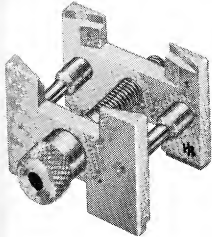
MOVEMENT HOLDER

Designed specifically for baguette movements and for very small movements of other shapes. Easier to work with than larger holders. Cut outs provide clearance for winding stem. Well made, with guide pins to assure perfect alignment of jaws.



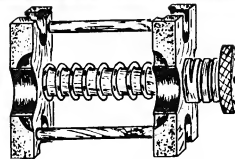
No.	Each
33-736	\$2.75

2-WAY MOVEMENT HOLDER



Reversible brass holder will take all shapes and sizes from Baguette to 12½ ligne. Has adjusting screw.

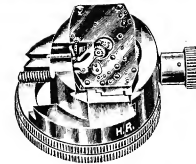
No.	Sizes	Each
33-737	Baguette to 12½ ligne	\$2.45



4-WAY MOVEMENT HOLDER

Has four sets of undercut jaws for holding movements up to 13 lignes. Will not tip as it keeps movement in the center of the working area. Has adjusting screw.

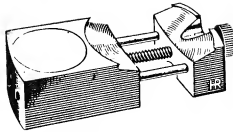
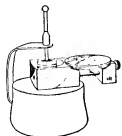
No.	Sizes	Each
33-760	Baguette to 13 ligne	\$4.50



SWISS STYLE MOVEMENT HOLDER

Has adjustable jaws which hold all sizes and shapes of movements up to 11½ ligne. Compact and easy-to-handle.

No.	Sizes	Each
33-743	Baguette to 11½ ligne	\$2.55



MONBROS MOVEMENT HOLDER

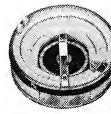
Large part can be clamped in timing machine while watch is still in movement holder. For all sizes and shapes up to 21 ligne.

No.	Sizes	Each
33-733	Baguette to 21 ligne	\$5.50



No. 33-738

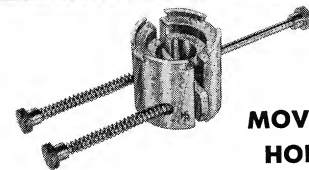
ELECTRIC WATCH MOVEMENT HOLDERS



No. 33-739

Genuine Ebauches plastic movement holders for Landeron 4750 and 4751. No. 33-738 is for assembly and disassembly. No. 33-739 is for checking the reassembled movement... it has a compartment for battery (WD-4).

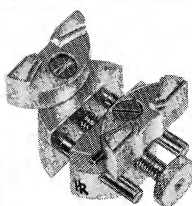
No.	Description	Each
33-738	Plain	\$3.75
33-739	Uses battery WD-4	6.95



MOVEMENT HOLDERS

Have adjustable jaws for holding movements from 3¾ ligne to 13 ligne. Spring adjustable models with center post support for fitting hands, etc.

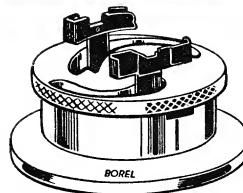
No.	Sizes	Each
33-751	3¾ ligne to 7½ ligne	\$3.50
33-752	7¾ ligne to 13 ligne	3.50



ALUMINUM MOVEMENT HOLDER

Have adjustable jaws (upper portion of jaws pivot to desired shape) for round, oval, or rectangular movements. Two different shoulder depths for gripping back plates of various thicknesses and ample stem clearance.

No.	Sizes	Each
33-766	2 ligne to 19 ligne	\$4.75



LOCK-TITE MOVEMENT HOLDER

By turning top plate, jaws will hold movements from 3¾ ligne to 12 ligne of any shape.

No.	Sizes	Each
33-764	3¾ ligne to 12 ligne	\$2.95



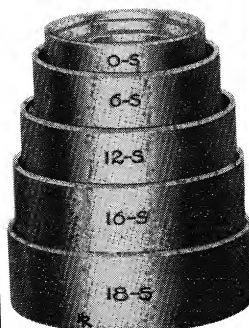
THREE-JAW MOVEMENT HOLDER

By turning top plate, jaws will hold round movements from 8/0 to 18s.

No.	Sizes	Each
33-765	8/0 to 18s	\$3.95

MOVEMENT RESTS

For round watch movements from 10/0 ligne to 18s. Set consists of 9 round aluminum rings with stepped inner rings.

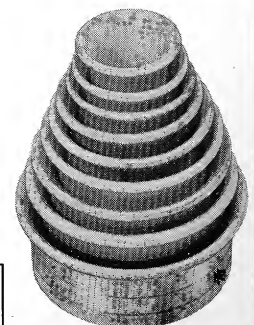


No.	Sizes	Set
33-714	10/0 ligne to 18s	\$4.20

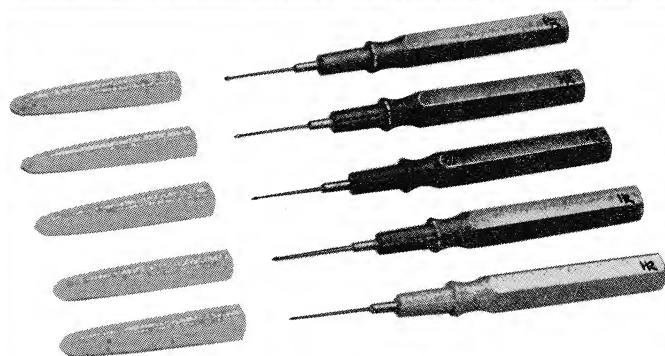
MOVEMENT RESTS

Flared rings for holding round watch movements. No. 33-608 set of 9 is made of boxwood and No. 33-609 set of 11 is made of plastic.

No.	Sizes	Set
33-608	8 to 21 ligne	\$1.65
33-609	7½ to 22½ ligne	1.40



OILERS



SWISS DIP OILERS

Have flat steel points, hexagon shaped non-rolling handles, and dust cap to keep tips clean. Oilers are color coded for quick identification.

No.	Color	Watch Size	Each
34-132	Black	Baguette	\$0.35
34-132G	Gold	Baguette	.35
34-134	Blue	Small Bracelet	.35
34-136	Green	Small Bracelet	.35
34-138	Red	Pocket	.35

SETS IN PLASTIC BOXES

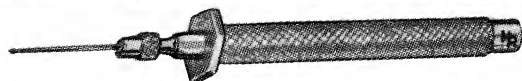
No.	Sizes	Set
34-730	Nos. 34-132/134/136/138	\$1.25
34-735	Nos. 34-132/134/136/138 & Insertor 34-146	1.85



*OIL INSERTERS

Used to force oil into balance jewel assemblies.

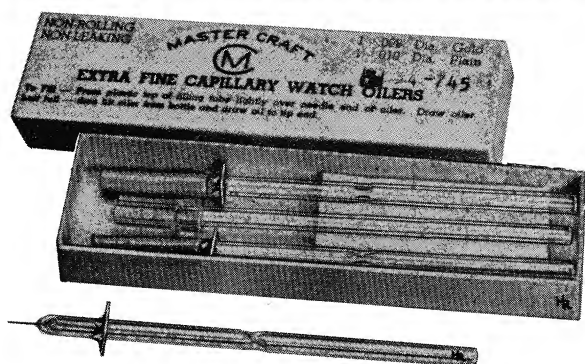
No.	Color	Description	Price
34-145	Yellow	With 1 Tip	\$0.40 ea.
34-146	Gold	With 3 Extra Tips	.60 set



K&D SOLID GOLD TIPPED OILER

10K gold tip prevents corrosion and is held in place by a friction chuck. Handle is knurled for a firm grip and has a hexagonal piece to prevent rolling.

No.	Hole Dia.	Each
34-067	.017"	\$1.00



MASTERCRAFT OILERS

Extra fine capillary watch oilers that are especially useful for incabloc and pallet stone oiling. Glass reservoirs have hollow steel needles and non-rolling attachment.

No.	Hole Dia.	Each
34-746	.0045"	\$0.85
34-747	.0050"	.85

SET IN CARDBOARD BOX

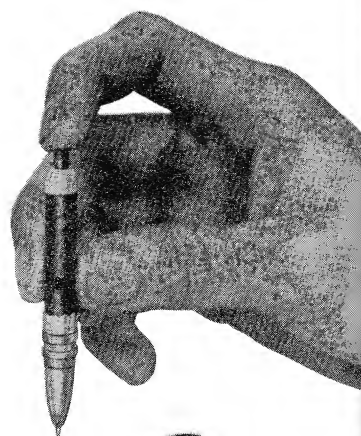
No.	Description	Set
34-745	Set of 2 Oilers with Filling Tube	\$1.75

ACCESSORY

No.	Description	Set
34-748	Filling Tube Only	\$0.35

OBAMA OILERS

The Obama is a precision oiler with a 10 degree scale for regulating the exact quantity of oil for lubricating watches and similar precision instruments.

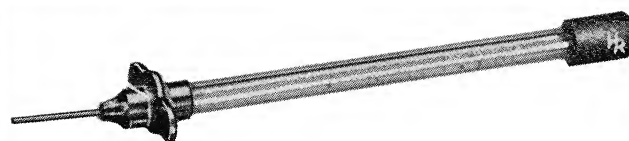


Simple and fast handling — By turning the regulator scale, the required quantity of oil enters the tube. Then the button is pushed and the oiler is gently brought in contact with the spot to be lubricated. When the button is released, the oiler automatically ejects the required amount of oil.

Reliability — The ejection of the oil is effected only at the return of the button and not when it is pushed. This means that the ejection of oil always occurs under the same conditions, and does not depend on manual skill. Moreover, the Obama allows an exact quantity of oil to be ejected for each of the 10 different settings on the regulator scale. Turning the regulator scale one degree effects an increase of 30%.

Protection from dust and dirt — The oil is protected in a transparent oil container which is only unscrewed for cleaning and filling. The needle is protected by a special plastic stand that also keeps the oiler at hand, ready to use.

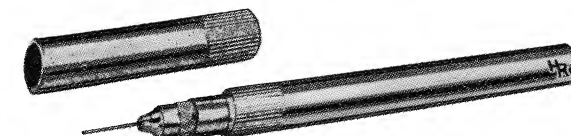
No.	Outside Dia. of Needle	Lubricating Suggestions	Each
34-310	0.15mm	Incabloc (with lengthened needle point 0.05mm)	\$9.95
34-315	0.15mm	Small bracelet watches	8.75
34-320	0.20mm	Large bracelet and pocket watches	*7.75
34-330	0.30mm	Pocket watches, clocks, and mainsprings	7.75
34-350	0.50mm	Clocks and mainsprings	7.75
34-380	0.80mm	Clocks and mainsprings	7.75



T.A.S. OILERS

Oil is released by touching hollow steel needle on part to be lubricated. Glass tube holds a good supply of oil and has a non-rolling attachment.

No.	Hole Dia.	Each
34-020	.009"	\$1.45
34-025	.010"	1.45
34-028	.013"	1.45



T.A.S. OILERS IN METAL CASE

Similar to T.A.S. Oilers Nos. 34-020/025 except that they are housed in a protective metal case with cover.

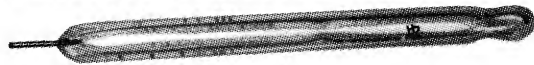
No.	Hole Dia.	Each
34-030	.009"	\$3.00
34-035	.010"	3.00



AUTOMATIC OILERS

Oil is released by touching the small needle inside the hollow tip... shuts off automatically when lifted. Glass tube that holds a good supply of oil and is enclosed in a plastic case with cover.

No.	Hole Dia.	Each
34-014	.013"	\$2.65
34-014½	.011"	2.65
34-015	.007"	2.65



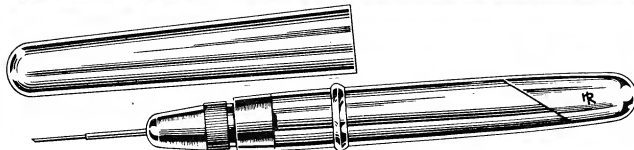
GLASS CAPILLARY OILERS

Have glass reservoirs molded on hollow steel needles that deposit oil on contact.

No.	Hole Dia.	Each
34-741	.007"	\$0.50
34-742	.009"	.50
34-743	.013"	.50

SET IN CARDBOARD BOX

No.	Sizes	Set
34-740	.007" - .009" & .013"	\$1.45



LUBRITYL CLOCK OILER

By pressing point against spot to be oiled, oil is ejected under pressure enabling it to reach hard-to-get-at places, even overhead. When pressure is released the excess oil is sucked back into the translucent reservoir. Leakproof, easy to clean and fill.

No.	Hole Dia.	Each
34-050	.019"	\$1.69



GLASS FOUNTAIN OILERS

Hollow needles deposit oil on touch. Glass tube holds a good supply of oil and has non-rolling head. Color coded for identification.

No.	Color	Hole Dia.	Each
34-123	Blue	.013"	\$0.45
34-125	Red	.010"	.45
34-127	Black	.007"	.45
34-129	Green	.006"	.45

SETS IN PLASTIC CASE

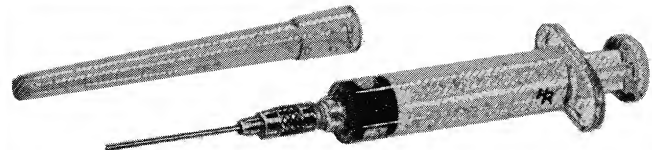
No.	Sizes	Set
34-725	.013" - .010" - .007"	\$1.25
34-727	.013" - .010" - .007" - .006"	1.65



GLASS CLOCK OILER

Has curved end for reaching into inaccessible places. Heavy glass tube holds large quantity of oil and is molded onto a hollow steel needle.

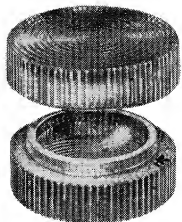
No.	Hole Dia.	Each
34-029	.014"	\$0.80



PRECISION APPLICATOR

Economical, disposable plastic syringe for applying adhesives, lubricants, fillers and other liquid compounds. Overall length, including hollow steel needle, 4¼". Comes with protective cover.

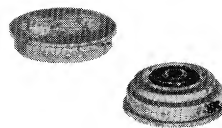
No.	Hole Dia.	Each	Doz.
34-056	.023"	\$0.55	\$4.80



GLASS OIL CUP

Has deep well for large quantity of oil. Entire cup is made of glass and is easily cleaned. Sides are ribbed to prevent slipping.

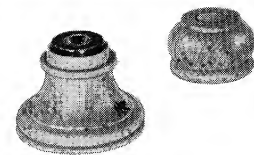
No.	Dia.	Each
18-503	1½"	\$0.90



WOOD OIL CUP

Polished hardwood oil cup with glass well for holding watch oil. Tight fitting cover prevents contamination of oil.

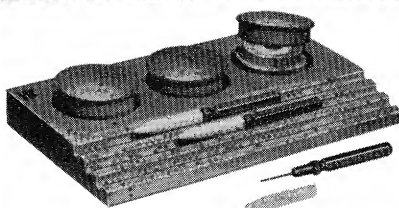
No.	Description	Each
18-504	Low Style	\$0.50



WOOD OIL CUP

Polished hardwood oil cup with glass well for holding watch oil. Tight fitting cover prevents contamination of oil.

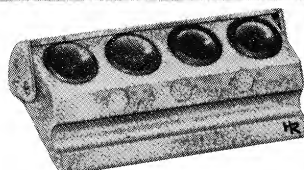
No.	Description	Each
18-505	High Style	\$0.80



OIL CUPS ON WOOD STAND

Set of three hardwood oilcups with glass wells of different sizes. Cups fit into stand which also has rack for oilers

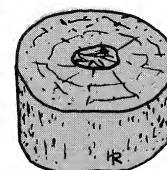
No.	Description	Set
18-530	With 3 Oilers	\$3.75



FOUR WELL OIL CUP STAND

All metal stand with hinged roll-back cover to protect oil. Wells are made of glass. Stand is nickel plated and heavy enough to stay put, and is fitted with three holes for pith, and a groove for oilers.

No.	Length	Each
18-541	3½"	\$4.50



FLORIDA PITH

Selected button pith for holding small delicate parts while brushing and cleaning. Also used to clean oilers. Each box contains 12 pieces.

No.	Diam.	Price
35-401	1"	\$0.50
35-402	1½"	
35-402½	1¾"	
35-403	Assorted	



NYE'S OIL

Super refined Porpoise Jaw oil products that have a chemical content suitable for lubricating precision instruments. Outstanding features include the ability to stay at the point of lubrication, thereby not spreading to other parts of the mechanism; a high resistance to oxidation, gumming and evaporation; non-corrosive qualities; and the highest lubricity (oiliness). Nye's Oils are applicable for use on watches, transits and surveying instruments, electric relays and electronic components, alarms, registers, meters, valve assemblies, etc.

No.	Size		Each
	Bottle	Can	
CLOCK			
51-310	1/4 oz.	—	\$0.95
51-311	1 oz.	—	1.90
51-312	2 oz.	—	3.40
51-314	4 oz.	—	6.50
51-315	—	8 oz.	12.00
51-316	—	Pint	18.00
51-317	—	Quart	31.50
WATCH			
51-320	1/4 oz.	—	.95
51-321	1 oz.	—	1.90
51-322	2 oz.	—	3.40
51-324	4 oz.	—	6.50
51-325	—	8 oz.	12.00
51-326	—	Pint	18.00
51-327	—	Quart	31.50
BRACELET			
51-330	1/4 oz.	—	.95
CHRONOMETER			
51-335	1/4 oz.	—	.95
TOWER CLOCK			
51-340	2 oz.	—	3.75
ELECTRIC CLOCK			
51-345	1 oz.	—	.65

SPECIFICATIONS

Below is a summary of the physical characteristics of the Nye lubricants listed above.

No.	Viscosity			Pour Pt. °F	Flash Pt. °F	Spreading Tendency	
	100°F		210°F			Jewel	Metal
	S.U.S.*	Cs.**	Cs.				
51-310/7	104.4	21.5	4.4	—25	377	Low	Moderate
51-320/7	87.8	17.6	3.9	—25	365	Low	Moderate
51-330	79.6	15.6	3.5	—22	370	Low	Moderate
51-335	104.4	21.5	4.4	—25	377	Low	Moderate
51-340	104.4	21.5	4.4	—25	377	Low	Moderate
51-345	130.3	27.5	—	—25	360	Moderate	High

*Saybolt Universal Seconds.

**Centistokes (Kinematic Viscosity). Centipoise figures are equal to centistokes times density.

FULCRUM OILS

Though light enough to flow easily, Fulcrum oils stay where put, giving positive pivot point protection. They won't evaporate, gum or become stringy. Give effective long lasting lubrication.



No.	Size	Bottle
WATCH		
51-120	1/4 oz.	\$0.95
BRACELET		
51-130	1/8 oz.	1.15
CHRONOMETER		
51-135	1/8 oz.	.95
CLOCK		
51-110	1/4 oz.	.95
51-111	1 oz.	1.90
51-114	4 oz.	6.50
51-115	8 oz.	12.00
51-116	Pint	18.00

MOEBIUS OILS

A wide selection of oils and greases made in Switzerland for the use of its many watch factories.



REGULAR WATCH OILS

No.	Type	Viscosity at +20°C (stokes)	Pour Pt. °F	Size	Bottle
WATCH					
51-181	Chronometer	1.0	—20°	2 grams	\$1.25
51-182	Wrist	0.8	—20°	8 grams	1.25
51-182A	Pocket	1.0	—20°	8 grams	1.25
CLOCK					
51-183	Regular	1.2	—5°	25 grams	1.00
51-183A	Low Temp.	1.2	—20°	25 grams	1.25
51-183B	Low Temp.	0.51	—35°	30 grams	1.50
51-184	Tower	1.5	—20°	35 grams	1.00

SPECIAL PURPOSE SYNTHETIC WATCH OILS

No. 51-186A is for use on watches cleaned ultrasonically. No. 51-186B is for use on automatic watches.

No.	Type	Viscosity at +20°C (stokes)	Pour Pt. °F	Size	Bottle
51-186A	Synt-A-Lube	1.2	—30°	2 grams	\$2.00
51-186B	Synta-Visco-Lube	2.7	—25°	2 grams	2.00

SYNTHETIC WATCH OILS

No.	Type	Viscosity at +20°C (stokes)	Pour Pt. °F	Size	Bottle
51-191	Synt-A-Lube	1.2	—30°	2 grams	\$1.50
51-191P	Synt-A-Lube	1.2	—30°	5 grams	3.95
51-191L	Synt-A-Lube	1.2	—30°	10 grams	6.65
51-192A	Synta-Visco-Lube	2.7	—20°	2 grams	1.50
51-192B	Synta-Frigo-Lube	0.6	—40°	2 grams	1.50
51-192C	Syntalube "Artic"	0.24	—60°	2 grams	1.50

ASSORTMENT

No.	Description	Set
51-199	Contents consists of Nos. 51-181, 182, 182A, 183, 184, 191 & 188	\$6.75

MAINSRING LUBRICANTS

No.	Description	Movement	Size	Bottle
51-187	Grease	Clock	20 grams	\$0.55
51-188	Between oil & grease	Watch	20 grams	1.15



ARETOL

Prevents the spreading of mineral oils and oils with high mineral oil content on metal surfaces. Apply by immersing part... quickly dries.

No.	Size	Bottle
51-189	125 grams	\$1.70

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



LA PERLE OILS

Famous French oils which have been preferred by many for a great number of years. They do not dry-up, are unaffected by extreme heat or cold, and stay put.

No.	Size	Bottle
CLOCK		
51-210	1 oz.	\$ 0.85
51-216	Pint	11.00
51-217	Quart	19.50
WATCH		
51-220	1/2 oz.	.80
BRACELET and CHRONOMETER		
51-230	1/2 oz.	.80
TOWER CLOCK		
51-240	2 oz.	1.00



BRIDLOIL

For lubricating the walls of barrels on automatic watches to facilitate the slipping of the bridge. Compounded specially for steel or alloy bridges.

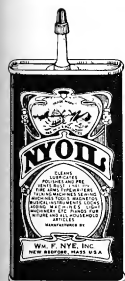
No.	Bottle
51-471	\$1.50



WESTCLOC M-4 GREASE

For lubricating thrust washer through hole in rotor. Will correct majority of noisy motors.

No.	Size	Tube
51-089	1 oz.	\$1.15



NYOIL

Can be used as a cleaner, polisher, lubricant and rust preventer. Excellent for lubricating precision machinery that must operate at both high and low temperatures.

No.	Size	Can
51-370	3 oz.	\$0.40



HOROLUBE 9-C

A high quality, low-cost lubricant especially made for clocks, including those with jeweled escapements. Virtually permanent, it will not evaporate, decompose, oxidize, or turn rancid. Its resistance to spreading is greater, by test than any other clock lubricant. Non-toxic; will not irritate.

No.	Size	Bottle
51-081	1/2 oz.	\$0.75
51-082	2 oz.	2.25



ELECTROLUBE

A lubricant especially compounded for fiber and worm gears in all types of electric clocks. Has the correct consistency to cling to gears and will not gum.

No.	Jar
51-094	\$0.95



LA PERLE STEM GREASE

Protects winding and setting mechanism on precision instruments from rust. Can also be used on electric clock gears.

No.	Tube
51-241	\$0.85



NYE'S LATHE OIL

A specially prepared oil for use on precision jewelers' lathes and oil stones. Pour point is a -31°F flash point 342°F.

No.	Size	Bottle
51-350	4 oz.	\$0.50



V.T.F. OILS

Non-gumming oils especially refined for watches, clocks and mainsprings.

No.	Type	Size	Bottle
51-410	Clock	1 oz.	\$0.50
51-420	Watch	1/2 oz.	.50
51-433	Mainspring	1/2 oz.	.50



ELECTROL

Oils made specifically to withstand heat from resistor coils in electric clocks.

No.	Type	Bottle
51-091	Open plate clocks	\$0.75
51-092	Sealed rotor movements	.75
51-093	Small fiber gears	.75
51-096	Automobile clocks	.75
51-095	w/molybdenum disulphide for instruments	.75



No. 51-104

No. 34-055

SILICON WATERPROOF CASE SEALER

Prevent comebacks with this new waterproof case sealer. It comes in a handy tube, and contains the miracle waterproofing ingredient "SILICON." It never liquifies, never dries out, always remains plastic, thus guaranteeing an excellent dust and waterproofing seal. Silicon sealer prevents "seizing" of the case back, protects the stem-opening, and helps prevent corrosion at all points of closure. The sealer can be purchased with a precision syringe type applicator (No. 34-055) for applying the sealer in hard-to-reach places.

No.	Description	Price
51-104	Sealer Only	\$1.00
34-055	Sealer and Syringe	1.50

PLATERS AND ACCESSORIES

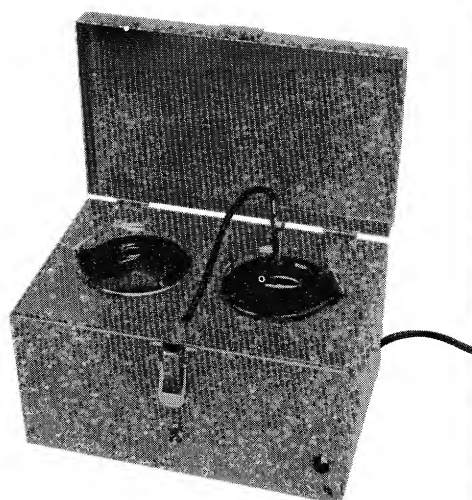
HR PENNANT COMPACT ELECTROPLATER

- Fast • Efficient • Dependable • Foolproof

Just pour the Pennant Plating Solution into one of the beakers, attach the alligator clamp to the item, suspend it in the solution and turn on the current...within a short time the piece is plated.

The HR Pennant Compact Electroplater is a fast, efficient, profitable unit with two beakers to hold electro cleaning and/or plating solutions simultaneously.

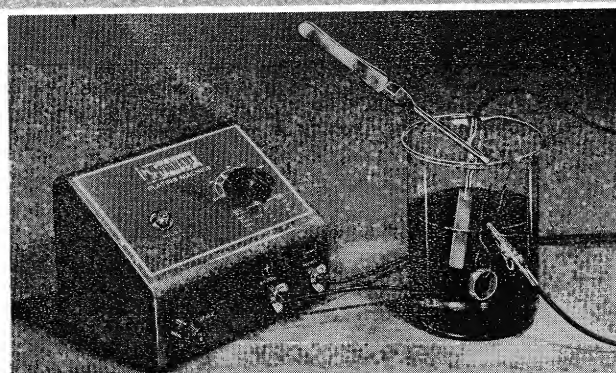
The complete unit is housed in a sturdy steel cabinet that is 9½" x 5¼". It comes complete with two beakers (3" wide x 4" deep), two stainless steel anodes, extension cord and plug, and the following solutions:



SET CONTAINS:

- 1 Pint of Gold Solution
- 1 Pint of Copper Solution
- 1 Pint of Lacquer
- 1 Pint of Lacquer Remover
- 2 oz. Sparex (for electro-cleaning)
- Complete Instructions

No.	Description	Set
35-701A	110 Volt, A.C.	\$47.50



HR PENNANT SWITCH CONTROLLED ELECTROPLATER

By turning the switch to the proper voltage you can have a metal coating of the correct thickness layed-on in less than a minute...no agitation is required. The switch contains voltage settings for quick plating of Rhodium, Gold, Nickel (formerly a tricky plating problem), Silver and Copper, and for Electro Cleaning...settings are at 2, 4, 6, 8, and 10 volts.

The HR Pennant Switch Controlled Electroplater is small (6" x 4" x 4") precision built electronic unit (it has a solid state miniature power supply utilizing 4 silicon rectifiers) with a pilot light and fuse conveniently located on the front of the machine and hooked in series to indicate if the fuse is blown. Recommended rated capacity for the beaker is one quart Rhodium or Gold plating bath.

SPECIFICATIONS

- 0-10 voltage output DC Continuous duty
- Solid state power supply
- 4 Silicon rectifiers
- 110 volt 50/60 cycle
- Easily accessible fuse
- Terminal connector wing nuts
- Pilot light
- Plating chart printed below voltage switch
- Grey steel housing with hammertone finish
- Conveniently marked terminals
- Size: 6" x 4" x 4"
- Shipping Weight: 25 lbs.

CONTENTS OF SETS:

Two sets are available, one for Gold plating only (No. 35-702), and the other (No. 35-703) for both Gold and Rhodium plating.

- | | |
|-----------------------------|---------------------------|
| 1 Pint of Rhodium Solution | } No. 35-703 only |
| 1 Platinized Titanium Anode | |
| 1 Pint of Gold Solution | 1 Small Gold Anode |
| 1 Pint of Copper Solution | 1 Stainless Steel Anode |
| 1 Pint of Lacquer | 1 Ten Ounce Can of Sparex |
| 1 Pint of Lacquer Remover | 2 One Quart Beakers |

- 2 Lead Wires with Alligator Clamps and Terminal Lugs
- 1 Pound Copper Plating Wire
- Complete Instructions

No.	Description	Set
35-702	For Gold Plating only	\$57.50
35-703	For Gold and Rhodium Plating	82.50

HR PENNANT PLATING SOLUTIONS AND SUPPLIES



SOLUTIONS

Highly concentrated plating solutions, they have exceptionally long life, for use with HR Pennant Electroplaters.

No.	Type	Size	Bottle
52-832	Gold	Pint	\$ 5.40
52-836	Rhodium	Pint	16.50
52-836½	Rhodium	8 oz.	9.60
52-837	Copper	Pint	1.50
52-838	Silver	Pint	3.00
52-841	Nickel	Pint	1.50

REPLENISHER

No.	Type	Size	Bottle
52-849	Rhodium	1 oz.	\$5.25



ANODES

Made of high grade metals for use as electrodes in plating solution baths.

No.	Type	Each
52-892	Gold, Small	\$3.35
52-893	Gold, Large	4.95
52-895	Silver	3.35
52-896	Platinized Titanium	9.00
52-897	Stainless Steel	.60



PENNANT LACQUER AND STRIPPER

Lacquer—A high grade colorless, transparent lacquer that produces a tough smooth even surface on all kinds of metals.

Stripper—For removing old and worn lacquers.

No.	Style	Size	Each
51-675	Lacquer	Pint	\$2.00
51-682	Stripper	Pint	1.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

JNT ELECTROPLATERS

For brush plating large and small pieces, for retouching, and for completely plating small items by means of the dip-coating process. Plating can be polished and buffed repeatedly without wear.

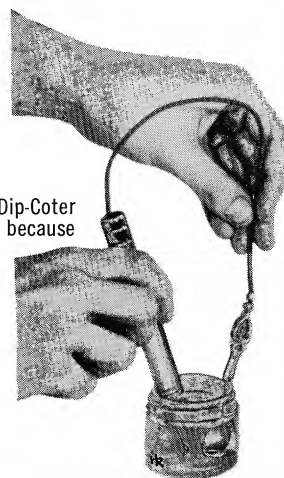
BRUSH PLATING KITS without penlite batteries

No.	Description		Set
	Solution	Cleaner	
35-714	Gold-Cote	Silver Polish	\$6.95
35-715	Silv-R-Cote	Silver Polish	4.95
35-716	Met-L-Cote	—	3.95
35-717	Copr-Lectro-Cote	Metal Cleaner	3.95
35-718	Rhodium-Cote	Foam-Clen	8.95

Note: Met-L-Cote is a non-corroding metal alloy similar in appearance to chromium and nickel.

COMBINATION KIT . . . without penlite batteries. For both brush plating and dip coating.

No.	Description	Set
35-721	With Gold & Silv-R-Cote Solutions	\$10.95



ACCESSORIES

Solutions, Anodes and Replacement parts for the various kits. Appl-I-Coter brushes and Dip-Coter heads include anodes. No replacement anode is necessary for the Rhodium Plating Kit because the original anode is made of platinum and will not wear out.

Metal	Cost of Solutions		Cost of Replacement Heads or Anodes		
	2 oz.	4 oz.	Dip-Coter	Appl-I-Coter	Anode
Silv-R-Cote	\$2.00	\$3.00	\$2.00	\$2.00	\$0.50
Met-L-Cote	1.50	3.00	2.00	2.00	.50
Copr-Lectro-Cote	1.50	3.00	2.00	2.00	.50
Gold-Cote	6.00	9.00	3.50	3.50	2.00
Rhodium-Cote	4.00	7.50	6.50	6.50	—
Copr-Cote*	.50	1.00	—	—	—

*Copr-Cote is a wipe-on copper solution used without anodes as an underplating.

BRUSH PLATING ACCESSORY

With jumbo sized brush for working on large surfaces. Connects to terminals on rectifier plating machine Nos. 35-702/703, see page 66. Available with three different anodes.

No.	Description	Each
35-731	Gold Anode	\$26.50
35-732	Silver Anode	7.50
35-733	Platinum Anode	40.00

CARO PERFECTION 3-IN-1 PLATING SOLUTION

Made from pure 24K gold. Roman, Rose and English finish in one solution. Can be used with or without plating machine or batteries.

No.	Size	Bottle
52-801	8 oz.	\$1.60
52-802	Pint	2.90
52-803	Quart	5.50



GOLD CHLORIDE

Pure chloride of gold for making plating solutions.

No.	Description	Each
52-850	Tube of 15 grains	\$2.70



Schwerters® SILVER PLATE

Contains pure silver, no mercury. Plates brass, copper or nickel without batteries.

No.	Size	Each
52-860	2 oz. bottle	\$0.80



Schwerters® GILT PLATE

For gilding solder after working on gold or gold filled article. Used without batteries.

No.	Size	Each
52-863	2 oz. bottle	\$0.70

LACQUER AND THINNER

Lacquer—prevents tarnish when applied to all types of metal surfaces.

Thinner—for thinning lacquer when it gets too thick. Can also be used as a lacquer remover.



No.	Type	Size	Bottle
51-671	Lacquer	2 oz.	\$0.35
51-680	Thinner	1 oz.	.30

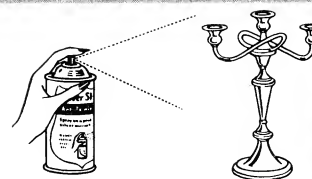
KRYLON

An Acrylic plastic spray coating... can be used in place of lacquer for protecting jewelry, etc. Perfect for large objects... clear as glass. Won't turn yellow. Non-inflammable.



No.	Size	Each
51-676	16 oz. Spray Can	\$1.95

SILVER SHEILD

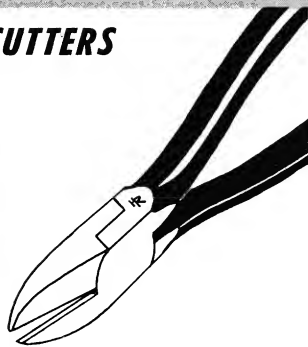


Anti-tarnish spray for all silver. Produces a hard, clear plastic film that protects silver against tarnish producing elements. Easy to spray on... easy to wash off.

No.	Size	Each
51-678	12 oz. Spray Can	\$2.00

PLIERS AND NIPPERS

CUTTERS



DIAGONAL

Traditional wire cutter, also known as a "Dic", used for all normal wire cutting. Cutting edge crops close and snap-cuts almost to the tip.



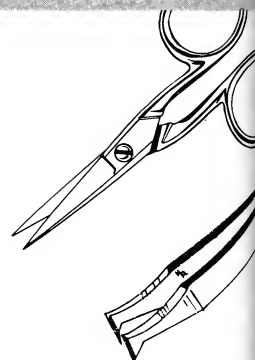
END

Used when space or angle of wire prohibits use of other cutters. Jaws are set straight across with pointed or rounded ends.



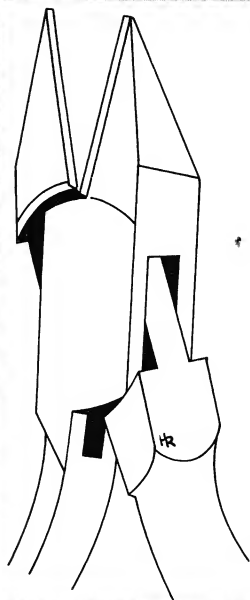
OBlique

Used when space or angle of wire prohibits use of other nippers. Jaws are angled 15° to 20°, and pointed end snap-cuts at tip.



SCISSORS and TWEEZERS

Scissors give the shearing action needed for flat surfaces. Tweezers cut very small wires without crushing the ends.



Precision "BOX JOINT" construction outlasts and outperforms all other types. In addition they:

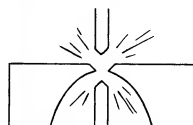
- Retain precise alignment even under strain and after considerable use.
- Jaws never develop looseness or wobble, and yet open and close smoothly.

Lap Joints can also give high quality precision performance. All HR lap joint tools have been carefully joined to retain precise jaw alignment and to give smooth opening and closing action.

CUTTING EDGES

The temper and composition of the metal used on the cutting edges determines how they will cut. Great hardness enables them to cut hard metals and alloys, and will increase their wearing life. However, edges that are too hard are brittle and break easily.

The various shapes are illustrated and described below. They show the importance of angle and thickness in determining the function of the cutting edge. Note: There is no universal cutter... some degree of hardness will have to be sacrificed when choosing cutters with Semi-Flush or Full-Flush Edges.



REGULAR EDGES

Traditional cutting edge for hard wire... leaves a wire peak.



SEMI-FLUSH EDGES

For cutting medium hard wire... leaves a very small peak.



FULL-FLUSH EDGES

For cutting soft wire... leaves no wire peak.



SHEARING

For all flat and sometimes round wire... leaves no wire peak.



PARALLEL

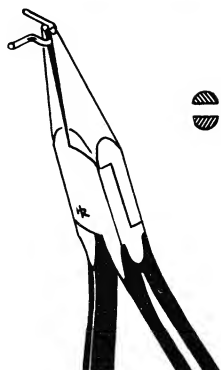
Applies full bite simultaneously to all parts of cutting edge.



TIP CUTTERS

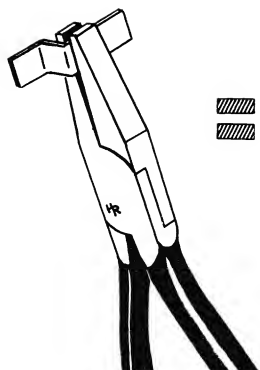
Snap-cuts at extreme tip... available on lightweight nippers and tweezers.

PLIERS



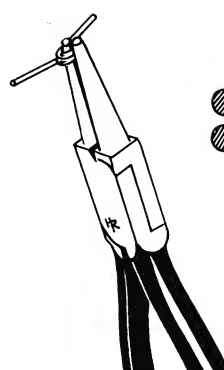
CHAIN

Traditional and most popular pliers, also known as Snipe Nose. Used to make bends, loops and similar forming operations on wire or sheet metal, and for gripping, manipulating and pulling. Insides of jaws may be smooth or serrated.



FLAT

For gripping and holding flat or square objects securely and for making angular bends and similar forming operations. Can also be used for some manipulating and pulling. Insides of jaws may be smooth or serrated.



ROUND

For making bends, loops, circles, coils on wire or sheet metal. Can also be used for some manipulating functions. The tapered circular jaws are smooth so that they will not scratch or nick soft metals.



SPECIAL and COMBINATION

Pliers and/or cutters designed to perform more than one function such as bending and cutting, for special applications.

TWEEZERS

Perform essentially the same functions as pliers and nippers (cutting, forming, gripping, manipulating, probing, etc.) for miniature and microscopic

work. However, because precision work is so intricate and delicate, a great variety of patterns is made available. See pages 110 to 117.

Lindstrom Nippers machined and hand have Lindstrom's p of the jaws even i ness or wobble an

ZONE TEMPE

- Cu
- Jo
- Ha

BLACK HAND to order number.

BRIGHT HAN handles... no su

PLASTIC GRIP ... suffix "P" ad

DIA

Traditional cutte Head crops extru

BLACK
No.
38-015B

Tough cutters that leave a w

No.
38-015

Box Jo

DIAGON WITH V

For all norma at the tip of diameter.

No.
38-045B
Specify m

PRICES SUBJECT TO CHANGE WITHOUT

LINDSTROM Swedish NIPPERS

Lindstrom Nippers are forged from the finest Swedish Tool Steel available, then machined and hand finished to the most exacting specifications. Most of the nippers have Lindstrom's precision **Box Joint** construction that retains the precise alignment of the jaws even under strain and after considerable use. Jaws never develop looseness or wobble and yet open and close smoothly.

ZONE TEMPERED

- Cutting edges hardened for long wear
- Joint tempered to withstand great strain
- Handles tempered to withstand strong compression

STYLES and FINISHES

BLACK HANDLES—Standard finish, have polished heads... suffix "B" added to order number.

BRIGHT HANDLES—Special finish, plier is completely polished, including handles... no suffix.

PLASTIC GRIP HANDLES—Standard finish with Plastisol Cushion Grip handles... suffix "P" added to order number.

DIAGONAL CUTTING NIPPERS... Box Joint

Traditional cutter with regular cutting edges for all normal wire cutting operations. Head crops extruded wire close to a flat surface and jaws will snap-cut close to the tip.

BLACK HANDLES		
No.	Length	Price
36-015B	4"	\$4.00
	4½"	4.25
	5"	4.50
	5½"	4.70

BRIGHT OR PLASTIC GRIP HANDLES		
No.	Length	Price
36-015 and 36-015P	4"	\$4.25
	4½"	4.50
	5"	4.75
	5½"	4.95

Specify number and length, when ordering.

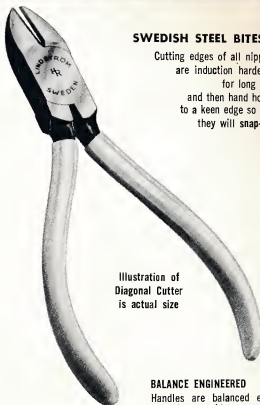


Illustration of Diagonal Cutter is actual size

SWEDISH STEEL BITES !

Cutting edges of all nippers are induction hardened for long life, and then hand honed to a keen edge so that they will snap-cut.

BALANCE ENGINEERED

Handles are balanced engineered to provide a comfortable grip and reduce hand fatigue from continuous use.



DIAGONAL CUTTING NIPPERS

Tough cutters for use on piano and hard alloy wire. Have regular edges that leave a wire peak.

No.	Length	Price
36-013B	4½"	\$3.25
	5½"	3.50
	6½"	3.95

Specify number and length, when ordering.

Box Joint



END CUTTING NIPPERS

For cutting wires that cannot be reached by diagonal nippers. 4½" and 5" sizes have regular edges that leave a wire peak. 4" has semi-flush edges.

BLACK HANDLES		
No.	Length	Price
36-004B	4"	\$4.25
	4½"	4.25
	5"	4.50

BRIGHT OR PLASTIC GRIP HANDLES		
No.	Length	Price
36-004 and 36-004P	4"	\$4.50
	4½"	4.50
	5"	4.75

Specify number and length, when ordering.

*Semi-flush edges on 4" size only.

Box Joint



DIAGONAL CUTTING NIPPERS WITH WIRE STRIPPING HOLE

For all normal wire cutting including snap-cutting at the tip of the jaws. Stripping hole is .052" in diameter.

No.	Length	Price
36-048B	5½"	\$4.95

Specify number and length, when ordering.



END CUTTING NIPPERS

Tough cutters for piano wire and hard alloy wires.

No.	Length	Price
36-058B	6½"	\$3.95
	8"	4.10

Specify number and length, when ordering.



MULTI-POWER END CUTTING NIPPERS

Built in leverage action with extra power at the jaws when cutting heavy piano wire.

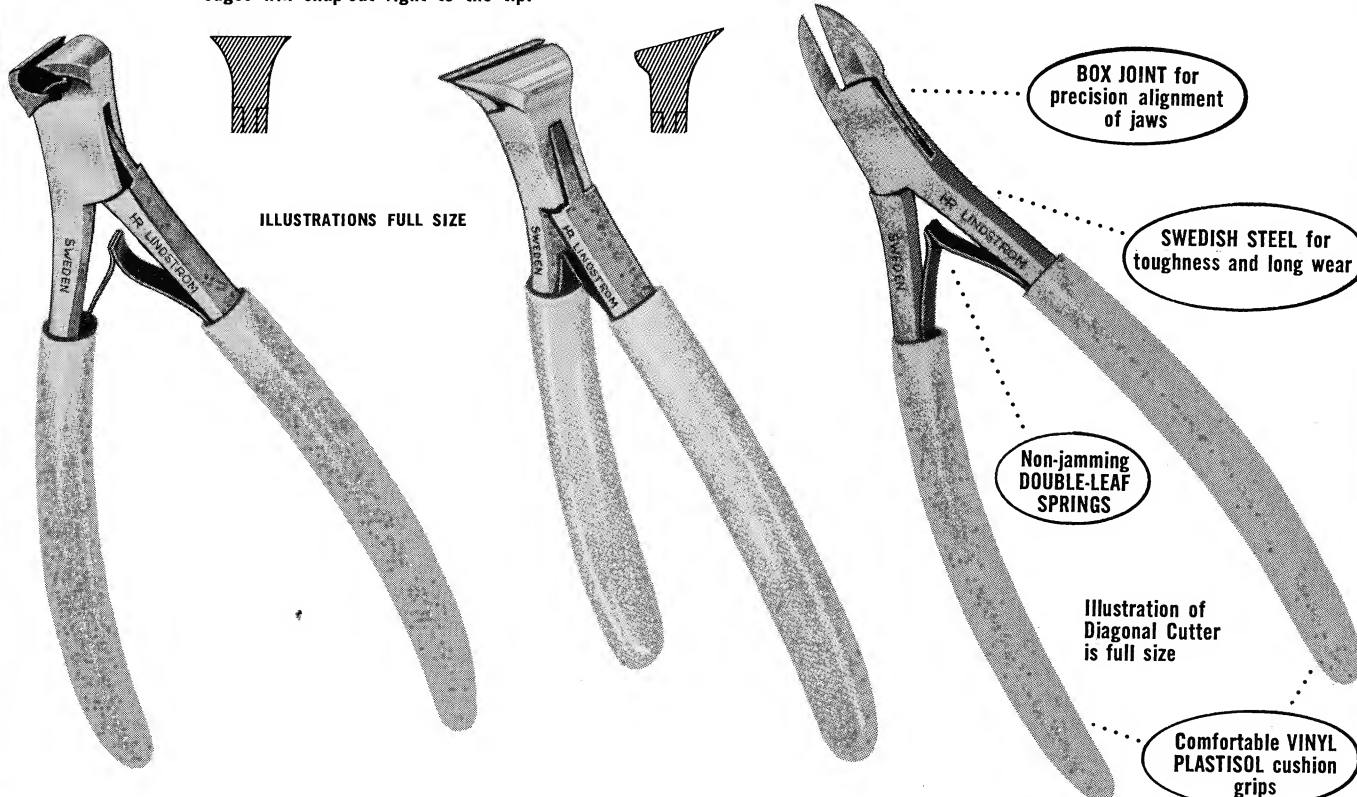
No.	Length	Price
36-058B	6½"	\$6.95

Specify number and length, when ordering.

PLIERS AND NIPPERS

LINDSTROM SUPREME NIPPERS for precision electronic wires

Midget nippers for use on the compact electronic circuits, assemblies, and components required by today's space age technology. Miniature heads easily reach into confined spaces and the sharp, honed cutting edges will snap-cut right to the tip.



END CUTTING

Jaws are set straight across with both ends coming to a point. Comes complete with vinyl plastisol handles and double-leaf springs.

No.	Cutting Edges	Length of cut	Overall	Price
36-316PS	Semi-Flush	5/8"	4 1/4"	\$5.85
36-316 1/2 PS	Full-Flush	5/8"	4 1/4"	6.35

OBLIQUE CUTTING

Head is angled 15° with tip coming to a point. Comes complete with vinyl plastisol handles and double-leaf springs.

No.	Cutting Edges	Length of cut	Overall	Price
36-317PS	Semi-Flush	5/8"	4 1/4"	\$5.85
36-317 1/2 PS	Full-Flush	5/8"	4 1/4"	6.35

DIAGONAL CUTTING

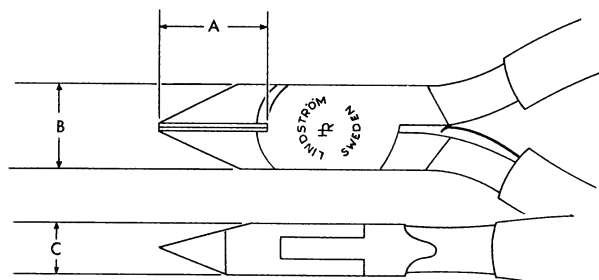
Traditional and popular type head for side cutting. Comes complete with vinyl plastisol handles and double-leaf springs.

No.	Cutting Edges	Length of cut	Overall	Price
36-318PS	Semi-Flush	1/2"	4 1/2"	\$5.85
36-318 1/2 PS	Full-Flush	1/2"	4 1/2"	6.35

LINDSTROM TAPERED NOSE NIPPERS for electrical/electronic wires

Larger, heavier and stronger than the Supreme series with a tapered nose for reaching into confined spaces and snap-cutting heavier wire at the tip.

Forged from the best high grade of Swedish Tool Steel this tapered nose diagonal cutter has cutting edges that have been induction hardened and then hand honed to a keen edge. All models have vinyl plastisol handles and double leaf springs.



No.	Length	Edges	A	B	C	Price
36-018PS	4 1/2"	Semi-Flush	1/2"	1 1/2"	5/16"	\$5.00
	5"	Semi-Flush	5/8"	1 1/2"	3/8"	5.25
36-018 1/2 PS	4 1/2"	Full-Flush	1/2"	1 1/2"	5/16"	5.50
	5"	Full-Flush	5/8"	1 1/2"	3/8"	5.75

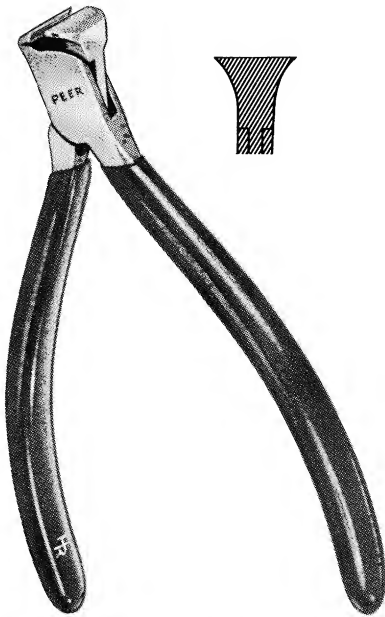
Specify number and length, when ordering

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

LIGHTWEIGHT NIPPERS

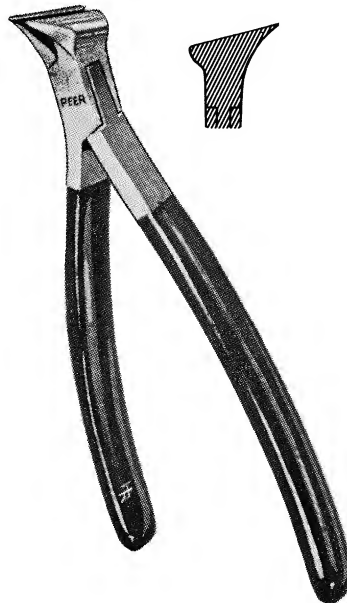
Small nippers with "Box Joints" and Semi-Flush Cutting Edges for delicate precision wire cutting. The sharp honed cutting edges will snap-cut close to the tip.



END CUTTING

Jaws are set straight across with both ends rounded. Handles are balanced and insulated with a thick coat of vinyl plastisol.

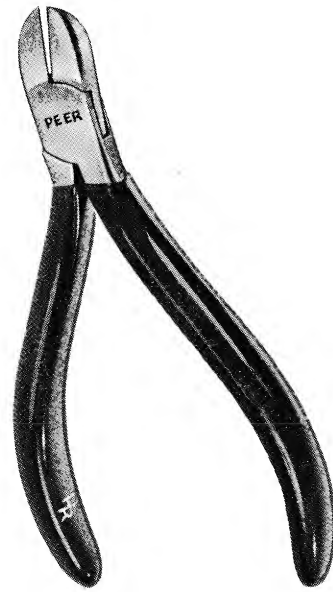
No.	Length	Cut	Price
36-716P	4½"	⅛"	\$3.95



OBLIQUE CUTTING

Head is angled 15° with tip coming to a point. Handles are balanced and insulated with a thick coat of vinyl plastisol.

No.	Length	Jaws	Price
36-717P	4¼"	⅛"	\$3.95



DIAGONAL CUTTING

Traditional and popular type head for side cutting. Handles are balanced and insulated with a thick coat of vinyl plastisol.

No.	Length	Jaws	Price
36-718P	4½"	½"	\$3.95

LAP JOINT NIPPERS

Inexpensive medium weight nippers made in West Germany from a fine grain, forged tool steel, with strong lap-joints, polished heads, and black handles.



DIAGONAL CUTTING

Traditional wire cutter for normal wire cutting use with regular edges that leave a small wire peak and that cut close to the tip.

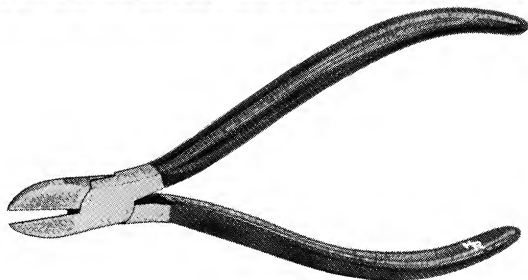
No.	O.L.	Cut	Price
36-740	4¾"	¾"	\$2.50



END CUTTING

For cutting wire that cannot be reached by other nippers because of space or the angle of the wire, regular edges leave a wire peak.

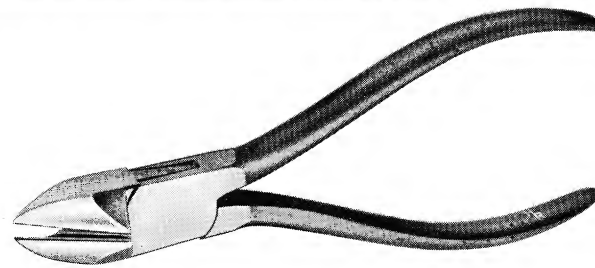
No.	O.L.	Cut	Price
36-741	4¼"	⅞"	\$2.95



SMALL LAP JOINT NIPPERS

Miniature diagonal cutter only ⅜" wide for small wire. Has Semi-Flush Cutting Edge that leaves a very small wire peak and snap-cuts close to the tip. Handles are insulated with a thick coat of vinyl plastisol.

No.	O.L.	Cut	Price
36-595P	4¾"	½"	\$3.50



STUBS PATTERN NIPPER

Beveled cutting head extends ¼" above Box Joint so that it will snap-cut at either end. Sturdily made with long wearing, regular cutting edges that leave a wire peak.

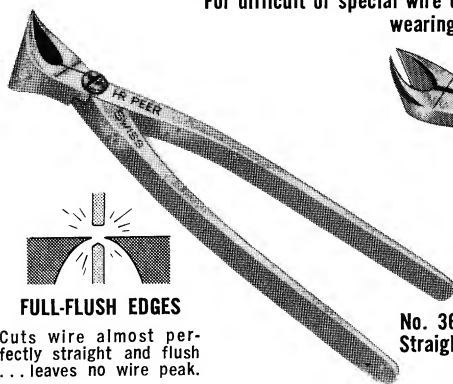
No.	O.L.	Cut	Price
36-597	5¼"	1"	\$3.95

PLIERS AND NIPPERS



SWISS NIPPERS

For difficult or special wire cutting problems. Hand made in Switzerland from a special tool steel with long wearing, honed cutting edges that far outlasts the ordinary nipper.



No. 36-617
Straight Handles

FULL-FLUSH EDGES

Cuts wire almost perfectly straight and flush... leaves no wire peak.

These miniature wire cutters are excellent for use on compact, intricate circuit assemblies, instruments and individual components such as electron tubes, semiconductors, miniature lamps, etc. Their light weight helps reduce operator fatigue resulting from continuous exacting wire cutting operations.

Oblique Cutters—Jaws are angled approximately 20° with one end coming to a fine point and other end rounded. Available with straight or curved handles.

End Cutters—Jaws are set straight across with one or both ends coming to a fine point. Available with straight or curved handles.

Plastisol Handles & Leaf Springs—Available for all models except No. 36-619RS. To order add the suffix "P" (for plastic handles) or the suffix "PS" (for plastic handles and leaf springs), to the order number, i.e. 36-617P or 36-617PS. Additional charges: 25¢ for handles and 50¢ for handles and springs.

No. 36-619PS
Curved Handles

Has optional plastic handles and removable non-jamming leaf springs.

No. 36-619RS
Curved Handles

Chromium plated with permanent On-Off leaf spring.

OBLIQUE CUTTERS

No.	Handles	Length	Jaws	Price
36-617	Straight	4 3/8"	1 1/8"	\$8.00
36-617C	Straight	4"	1 1/8"	8.00
36-619	Curved	4 1/4"	1 1/8"	8.00
36-619RS	Curved (with spring)	4 1/4"	1 1/8"	10.35

END CUTTERS

No.	Handles	Length	Jaws	Price
36-616	Straight	4 3/8"	5/8"	\$8.00
36-618	Curved	4 1/4"	1 1/8"	8.00
36-620	Straight	4 3/8"	3/4"	9.00

PEER EXTRA

Extra Hard oblique cutting edges (Rockwell "C" hardness in the high sixties) for the more difficult wire cutting problems. These Nippers are made of a long wearing special alloy that has been plated with chrome. Because of the amount of hand work devoted to their manufacture only a limited supply is available.

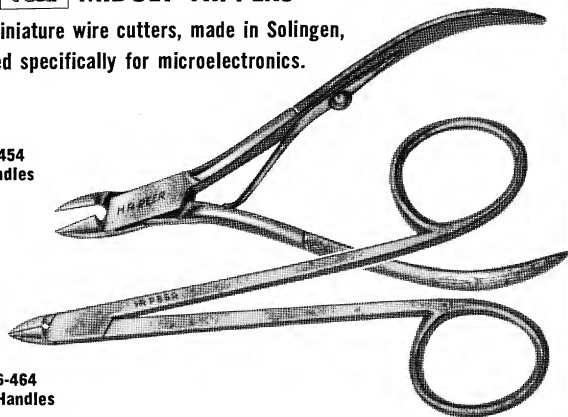
No.	Handles	Length	Jaws	Each
36-617E	Straight	4 3/8"	1 1/8"	\$17.50
36-619E	Curved	4 1/4"	1 1/8"	17.50



MIDGET NIPPERS

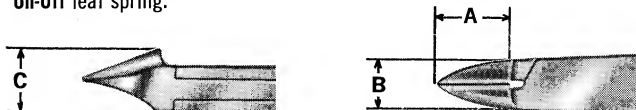
Box-Joint miniature wire cutters, made in Solingen, designed specifically for microelectronics.

No. 36-454
Plier Handles



No. 36-464
Scissor Handles

For flush cutting wires less than .025"...honed cutting edges will snap-cut at any part of cutting edge. Made of high quality drop forged steel that has been nickel plated. Model with plier handles has permanent On-Off leaf spring.



No.	Handles	Length	A	B	C	Price
36-454	Plier	4"	3/8"	3/32"	1/4"	\$4.40
36-464	Scissor	4"	3/32"	6/32"	3/16"	4.40

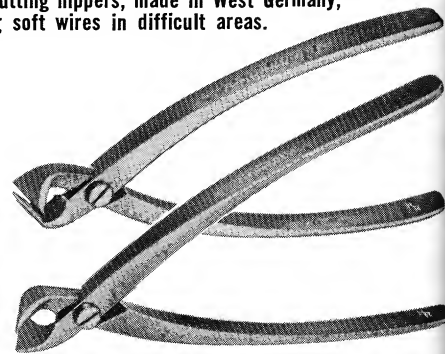


NIPPERS

Economical flush cutting nippers, made in West Germany, for cutting soft wires in difficult areas.

END CUTTING
No. 36-516

OBLIQUE CUTTING
No. 36-517



Slightly larger than the Swiss Nippers. These small sturdily made wire cutters have sharp, honed cutting edges that will cut soft wire straight and flush leaving no wire peak. Smooth polished handles are curved and balanced to fit the hand.

End Cutter—Jaws are set straight across with both ends coming to a fine point...will snap-cut at the tips.

Oblique Cutter—Jaws are angled 20° with one end coming to a fine point and the other end rounded...will snap-cut at the tip.

Plastisol Handles—Available for both models at an additional charge of 25¢. To order add the suffix "P" to the order number, i.e. 36-516P. No springs available.

No.	Style	Length	Jaws	Price
36-516	End	4 1/4"	1 1/8"	\$4.75
36-517	Oblique	4 1/2"	1 1/8"	4.75

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



for gripping

Lindstrom Pliers are machined and ground to Lindstrom's precision. The jaws even grip or wobble and

ZONE TEAR

BLACK HANDLES to order number

BRIGHT HANDLES...no

PLASTIC GRIP...suffix "P"

Popular snippers wire or sheet metal jaws that are serrated

Jaws	Price
Serrated	36-516
Smooth	30-516

Box

Similar in shape slightly longer

Jaws	Price
Serrated	36-516
Smooth	36-516

LONG N

Serrated jaws reach.

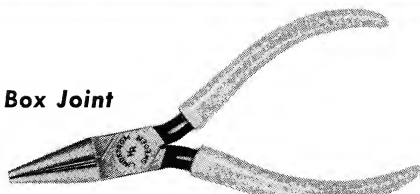
No.	Price
36-517B	

Specify number

PLIERS AND NIPPERS



Box Joint



ROUND NOSE PLIERS

For making bends, loops, circles, coils and similar forming operations on wire or sheet metal.

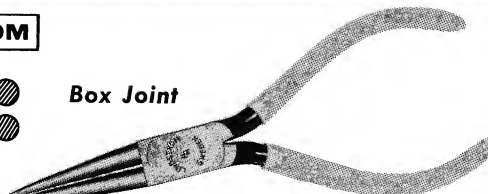
BLACK HANDLES			
Jaws	No.	Length	Price
Smooth	36-250 1/2 B	4 1/2"	\$3.70

BRIGHT OR PLASTIC GRIP HANDLES			
Jaws	No.	Length	Price
Smooth	36-250 1/2 & 36-250 1/2 P	4 1/2"	\$3.95

Specify number and length, when ordering.



Box Joint



LONG NOSE ROUND PLIERS

Similar in shape and function to the regular round nose plier except for a longer nose.

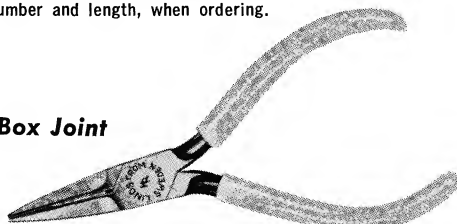
BLACK HANDLES			
Jaws	No.	Length	Price
Smooth	36-300 1/2 B	5 1/2"	\$4.00

BRIGHT OR PLASTIC GRIP HANDLES			
Jaws	No.	Length	Price
Smooth	36-300 1/2 & 36-300 1/2 P	5 1/2"	\$4.25

Specify number and length, when ordering.



Box Joint



FLAT NOSE PLIERS

For gripping, holding and making angular bends.

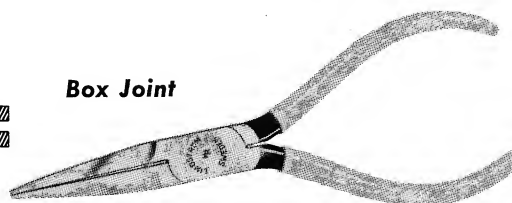
BLACK HANDLES			
Jaws	No.	Length	Price
Serrated	36-025 B	4 1/2"	\$3.70
Smooth	36-025 1/2 B	4"	3.60
		4 1/2"	* 3.70

BRIGHT OR PLASTIC GRIP HANDLES			
Jaws	No.	Length	Price
Serrated	36-025 & 36-025 P	4 1/2"	\$3.95
Smooth	36-025 1/2 & 36-025 1/2 P	4"	3.85
		4 1/2"	3.95

Specify number and length, when ordering.



Box Joint



LONG NOSE FLAT PLIERS

For gripping, holding and making angular bends.

BLACK HANDLES			
Jaws	No.	Length	Price
Serrated	36-030 B	5"	\$3.85
Smooth	36-030 1/2 B	5"	3.85

BRIGHT OR PLASTIC GRIP HANDLES			
Jaws	No.	Length	Price
Serrated	36-030 & 36-030 P	5"	\$4.10
Smooth	36-030 1/2 & 36-030 1/2 P	5"	4.10

Specify number and length, when ordering.

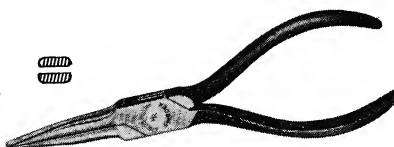


LONG NOSE FLAT PLIERS

Extra long serrated jaws for gripping and holding.

No.	Length	Price
36-031 B	6 1/2"	\$3.50

Specify number and length, when ordering.

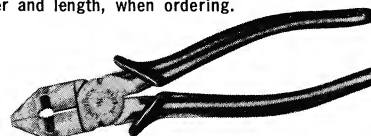


DUCK BILL PLIERS

Wide flat nose with smooth jaws.

No.	Length	Price
36-209 B	6"	\$4.10

Specify number and length, when ordering.



ELECTRICIAN'S COMBINATION PLIERS and SIDE CUTTER

Serrated jaws with opening in center for gripping large round objects. Insulated handles are heavy duty.

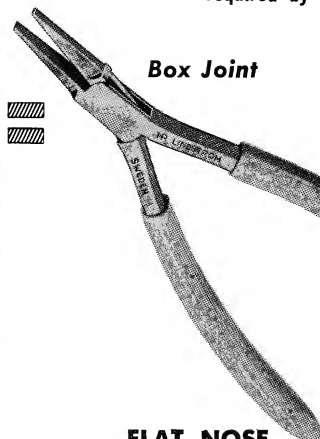
No.	Length	Price
36-207 E	7"	\$5.95

Specify number and length, when ordering.

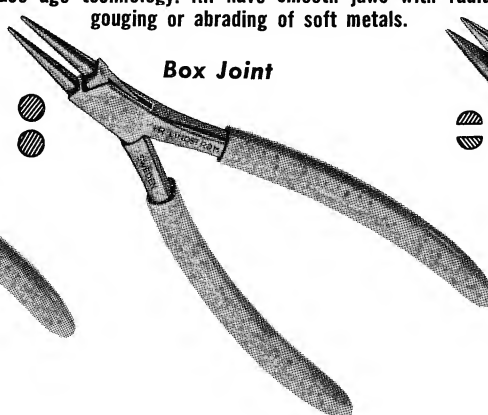


Supreme PLIERS for precision electronic wires

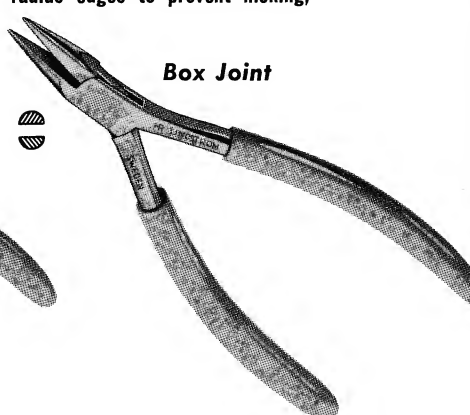
Midget pliers with "Box Joints" for use on the compact electronic circuits assemblies and components required by today's space age technology. All have smooth jaws with radius edges to prevent nicking, gouging or abrading of soft metals.



Box Joint



Box Joint



Box Joint

FLAT NOSE

Only 1/8" wide at tip. Insides of jaws are smooth and edges are rounded. Comes complete with vinyl plastisol handles.

No.	Length of jaws	Overall	Price
36-311 P	3/4"	4 3/4"	\$4.50

ROUND NOSE

Jaws are smooth and taper to a 1/32" diameter at the tip. Comes complete with vinyl plastisol handles.

No.	Length of jaws	Overall	Price
36-312 P	3/4"	4 3/4"	\$4.50

CHAIN NOSE

Popular snipe nose tapers to a 1/32" tip. Insides of jaws are smooth and edges are rounded. Complete with vinyl plastisol handles.

No.	Length of jaws	Overall	Price
36-314 P	3/4"	4 3/4"	\$4.50

Double-leaf springs available for Supreme pliers @ 25¢ per pair.

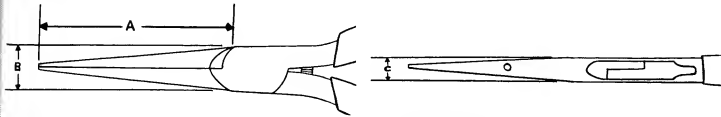
PEER® PLIERS for electronic pick-up and wiring

Specially designed chain nose pliers with smooth or serrated jaws, to handle delicate wiring and/or components in restricted work areas.

These **Peer Pliers** are made in West Germany from a high grade drop forged steel. The heads have a bright polished finish with radius edge jaws to prevent marring of precision wires. Handles are insulated with comfortable Vinyl Plastisol cushion grips.

LONG NOSE CHAIN PLIERS

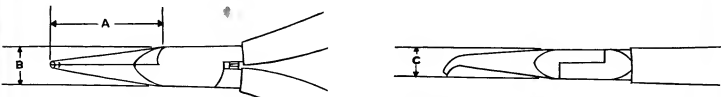
Long (1 3/4") finely tapered nose provides extra reach and is machined to 1/16" diameter at tip.



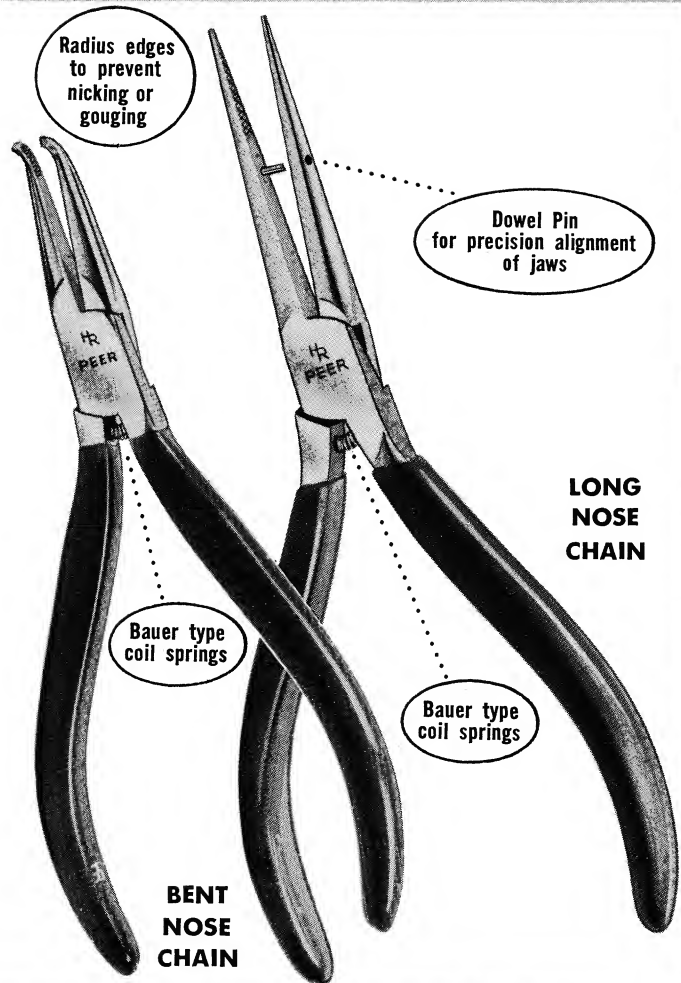
No.	Jaws	Dimensions				Price
		O.L.	A	B	C	
36-724PS	Smooth	5 3/4"	1 3/4"	3/16"	1/4"	\$3.95
36-725PS	Serrated	5 3/4"	1 3/4"	3/16"	1/4"	3.95

BENT NOSE CHAIN PLIERS

Regular length snipe nose pliers with a very short, angled (60°) tip for picking-up or manipulating precision wires.

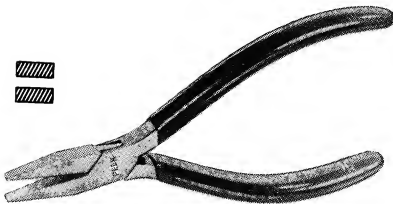


No.	Jaws	Dimensions				Price
		O.L.	A	B	C	
36-726PS	Smooth	5 1/8"	1 1/8"	3/8"	1/4"	\$3.75
36-727PS	Serrated	5 1/8"	1 1/8"	3/8"	1/4"	3.75



LIGHTWEIGHT PRECISION PLIERS

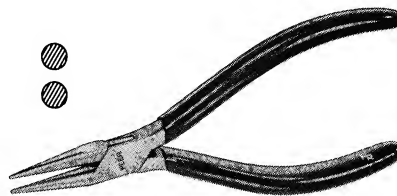
Small lightweight pliers with "Box Joints", Radius Edges, and Smooth Jaws for delicate, intricate manipulation of round and flat wire. Handles are insulated with comfortable Vinyl plastisol cushion grips.



FLAT NOSE

Only 1/8" wide at tip. Smooth jaws for gripping and holding flat surfaces or making angular bends.

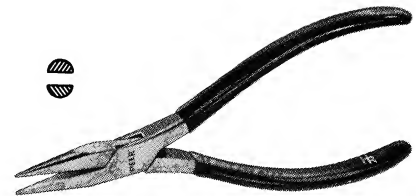
No.	Jaws	O.L.	Price
36-711P	7/8"	4 7/8"	\$2.95



ROUND NOSE

Smooth jaws taper 1/32" diameter tip. For making loops, bends, circles, coils and similar forming operations.

No.	Jaws	O.L.	Price
36-712P	7/8"	4 7/8"	\$2.95



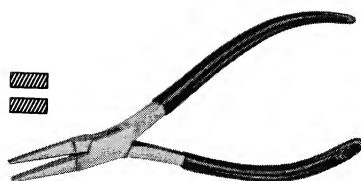
CHAIN NOSE

Popular snipe nose with smooth jaws for making bends, loops and similar forming operations.

No.	Jaws	O.L.	Price
36-714P	7/8"	4 7/8"	\$2.95

MIDGET PLIERS

The smallest Box Joint pliers available for fine, delicate construction and light precision work. All have smooth jaws with radius edges.



FLAT NOSE

Only 1/16" wide at tip. Smooth jaws for gripping and holding flat surfaces or making angular bends.

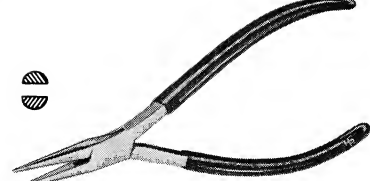
No.	Jaws	O.L.	Price
36-511P	3/4"	4 5/8"	\$2.95



ROUND NOSE

Smooth jaws taper to 1/64" diameter at tip. For making loops, bends, circles, coils, and similar forming operations.

No.	Jaws	O.L.	Price
36-512P	3/4"	4 5/8"	\$2.95

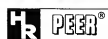


CHAIN NOSE

Popular snipe nose with smooth jaws for making bends, loops, and similar forming operations.

No.	Jaws	O.L.	Price
36-514P	3/4"	4 5/8"	\$2.95

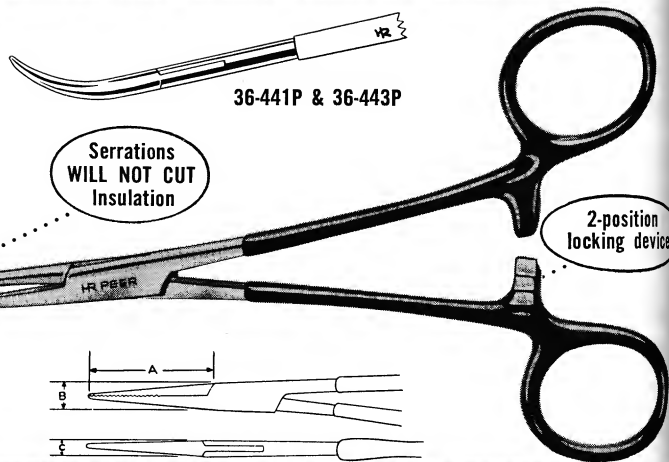
PLIERS AND NIPPERS



NEEDLE NOSE PLIERS

Imported Box Joint "Hemostat" Pliers for use as a heat sink, clamp or third hand while soldering, and for reaching into deep inaccessible areas to grip, manipulate or pull.

Peer Needle Nose Pliers are made of a high quality stainless steel that has been polished to a bright finish. Handles have a good insulation coat of vinyl plastic with a two-position locking device between the loops. The Box Joint construction prevents looseness or wobble from developing in the serrated jaws. Nos. 36-442P and 36-443P are "mosquitoe" style.



Serrations
WILL NOT CUT
Insulation

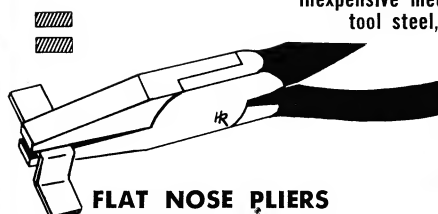
2-position
locking device

No.	Jaws	Dimensions				Price
		O.L.	A	B	C	
36-440P	Straight	5 3/4"	1 3/4"	1/4"	3/16"	\$4.80
36-441P	Curved (40°)	5 5/8"	1 3/8"	5/16"	3/16"	
36-442P	Straight	4 7/8"	7/8"	3/16"	1/8"	
36-443P	Curved (40°)	4 7/8"	7/8"	3/16"	1/8"	



LAP JOINT PLIERS

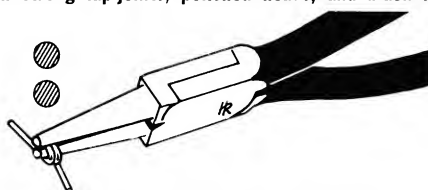
Inexpensive medium weight pliers made in West Germany from a fine grain forged tool steel, with strong lap-joints, polished heads, and black handles.



FLAT NOSE PLIERS

For gripping and holding flat or square objects securely and for making angular bends and similar forming operations. Available with jaws that are smooth on the inside to prevent scratching and nicking, or with jaws that are serrated to provide a firmer grip.

No.	Jaws	Length	Price
36-731	Smooth	4 3/4"	\$1.50
36-732	Serrated	4 3/4"	1.50



ROUND NOSE PLIERS

For making bends, loops, circles, coils and similar forming operations on wire or sheet metal. These pliers are made with smooth, tapered, circular jaws, 3/4" in length, that will not scratch or nick soft metals.

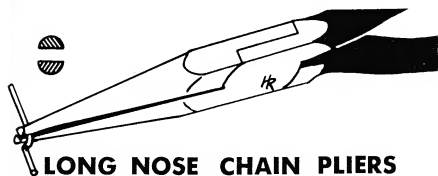
No.	Jaws	Length	Price
36-733	Smooth	4 3/4"	\$1.50



CHAIN NOSE PLIERS

For making bends, loops and similar forming operations on wire or sheet metal, as well as gripping, manipulating and pulling. Available with jaws that are smooth on the inside to prevent scratching and nicking, or with jaws that are serrated to provide a firmer grip.

No.	Jaws	Length	Price
36-735	Smooth	4 3/4"	\$1.50
36-736	Serrated	4 3/4"	1.50



LONG NOSE CHAIN PLIERS

Similar in shape to the regular chain nose plier except have a longer reach. These pliers can be used for making bends, loops and similar forming operations as well as gripping, manipulating and pulling. Available with jaws that are smooth on the inside to prevent scratching and nicking, or with jaws serrated to provide a firmer grip.

No.	Jaws	Length	Price
36-737	Smooth	5 1/2"	\$1.95
36-738	Serrated	5 1/2"	1.95

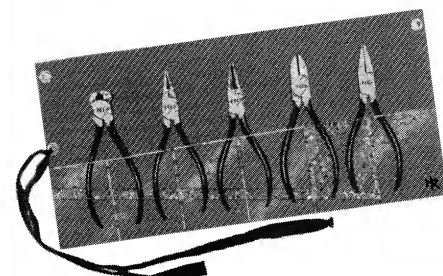
SAVE ON KITS!

Rugged, easy-to-carry pouches containing the most useful Lap Joint Pliers and Nippers needed for a variety of applications.

(See page 71 for description of cutting nippers that come with kits.)

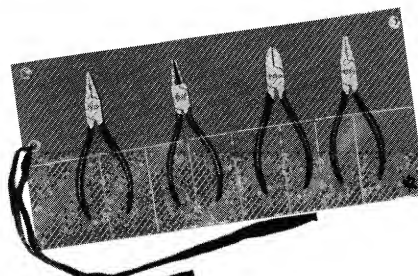
Set of 6 — Contains Chain, Round, Flat, Long Nose Chain, Diagonal Nipper, and End Nipper.

No.	Description	Price
36-750	Set of 6	\$11.45



Set of 5 — Contains Chain, Round, Flat, Diagonal Nipper, and End Nipper.

No.	Description	Price
36-751	Set of 5	\$9.95



Set of 4 — Contains Chain, Round, Flat Nose Pliers, and Diagonal Nipper.

No.	Description	Price
36-752	Set of 4	\$6.95

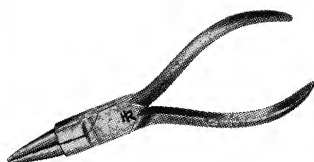


Set of 3 — Contains Regular Chain (with smooth jaws) and Long Nose Chain (with serrated jaws) and Diagonal Cutting Nipper.

No.	Description	Price
36-753	Set of 3	\$5.95

Note: Smooth jaws will be supplied on pliers in kits unless otherwise specified.

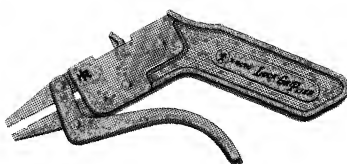
PRICES SUBJECT TO CHANGE WITHOUT NOTICE



ROSARY PLIERS

Combines round nose plier and diagonal cutting nipper in one tool for assembly operations.

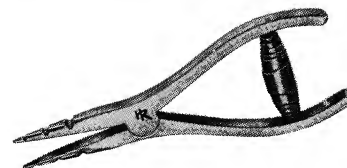
No.	Length	Each
36-579	4½"	\$4.10



X-ACTO LOCK GRIP PLIER

Used for picking up and grasping small parts; as a vise to free both hands; to cut small wire; to strip insulation. Jaws are operated by locking key.

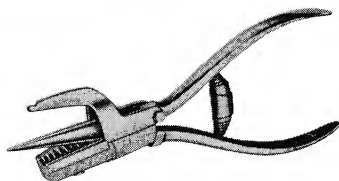
No.	Length	Each
36-598	5½"	\$3.50



BOW OPENING PLIERS

For removing pendant bows; expanding and opening links and rings. Has spring in handle which keeps pliers closed. Jaws open when handles are compressed.

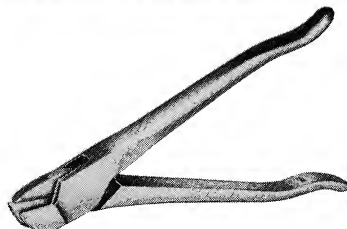
No.	Length	Each
37-001½	5½"	\$3.75



BOW OPENING AND CLOSING PLIERS

Opens and closes pendant bows, links, etc. Brass jaws prevent marring.

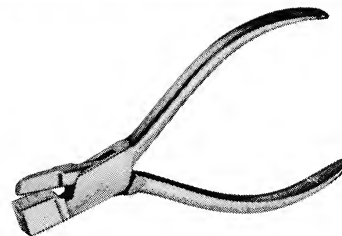
No.	Length	Each
37-003	6½"	\$6.60



BOW CLOSING PLIERS

For closing pendant bows and loops; and for bending rings.

No.	Length	Metal	Each
37-004	6"	Polished	\$3.75



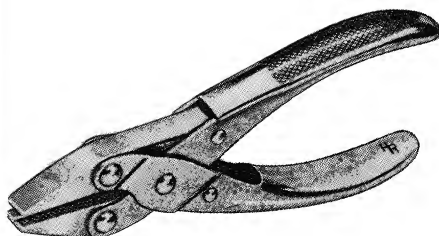
BOW CLOSING PLIERS

A light weight plier for closing small bows and loops. Brass jaw prevents marring.

No.	Length	Each
37-008	5"	\$4.15

BERNARD PARALLEL ACTION PLIERS

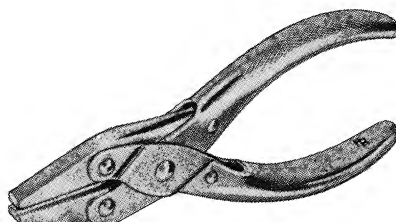
Jaws open and close parallel along entire length, providing a square vise-like grip. Handles and jaws completely nickel plated.



HEAVY FLAT NOSE PLIERS

Serrated jaws with "V" slot, for holding wire, running the entire length of jaws.

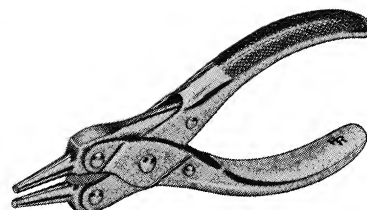
Jaws	No.	Length	Each
Serrated	36-100	4½"	\$2.40
Serrated	36-100½	5½"	2.75



LIGHT FLAT NOSE PLIERS

Serrated jaws (No. 36-103) have "V" slot, for holding wire, running the entire jaw length.

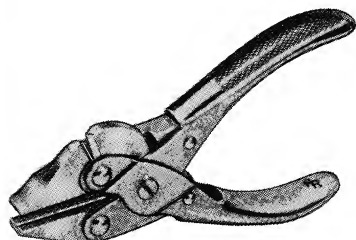
Jaws	No.	Length	Each
Serrated	36-103	5"	\$3.00
Smooth	36-103½	5"	3.00



ROUND NOSE PLIERS

For making bends, loops, circles, coils and similar forming operations on wire or sheet metal. Will not scratch soft metals.

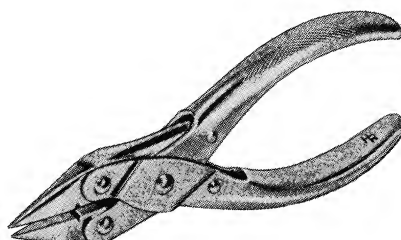
Jaws	No.	Length	Each
Smooth	36-104	5"	\$3.00



COMBINATION PLIERS

Flat nose pliers with serrated jaws having a "V" slot, to hold wire, that runs the length of the jaws combined with a wire cutter.

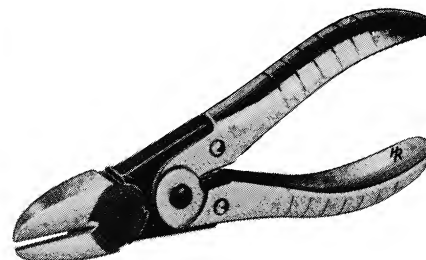
Jaws	No.	Length	Each
Serrated	36-102	4½"	\$3.10



CHAIN NOSE PLIERS

Have smooth jaws with a "V" slot across the back of the jaws for gripping wire.

Jaws	No.	Length	Each
Smooth	36-106	5"	\$3.10

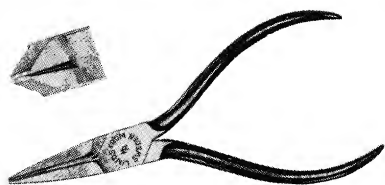


DIAGONAL CUTTING NIPPERS

Have tough, sharp cutting edges with spring action handles to keep in open position.

No.	Length	Each
36-107	5½"	\$5.15

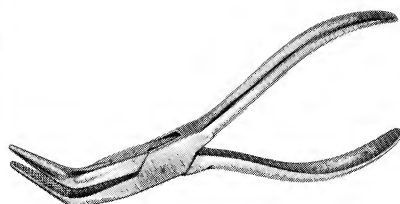
PLIERS



COMBINATION HALFROUND AND FLAT NOSE PLIERS

For making bends, loops and similar forming operations on wire or sheet metal, as well as for gripping, manipulating and pulling. Have smooth jaws to prevent scratching and nicking.

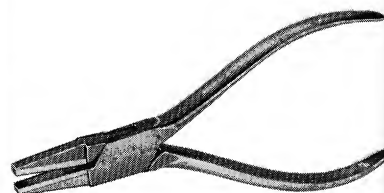
No.	Jaws	Length	Each
36-023 1/2B	Smooth	4 1/2"	\$3.85



BENT LONG NOSE CHAIN PLIERS

Serrated jaws are offset so that they may reach into inaccessible places.

No.	Jaws	Length	Each
37-041	Serrated	5 1/2"	\$3.75



BRASS LINED FLAT NOSE PLIERS

Jaws are brass lined to prevent marring of metal finishes and damage to delicate parts.

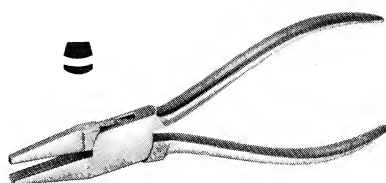
No.	Jaws	Length	Each
37-045	Smooth	4 1/2"	\$3.75



MAINSRING COILING PLIERS

Shapes the inside coils of watch mainsprings to fit the barrel arbor. Stepped end provides two sizes. Length 4 1/2".

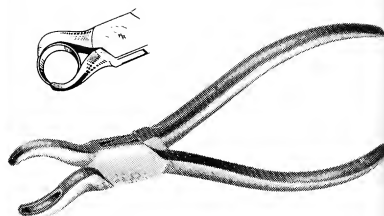
No.	Size	Each
37-091	Regular	\$3.75
37-092	Bracelet	3.75



RING BENDING PLIERS

Curved jaws are used for holding, straightening and bending rings.

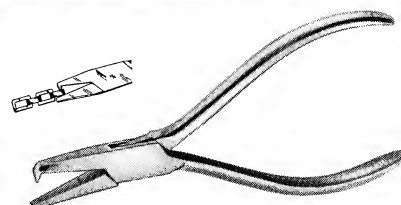
No.	Length	Each
37-109	5 1/2"	\$3.90



RING HOLDING PLIERS

Have grooved jaws for holding rings while filing or polishing.

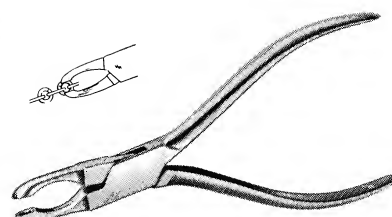
No.	Length	Each
37-105	5 1/2"	\$3.90



COMBINATION PENDANT POST AND BRACELET LINK PLIERS

For tightening or replacing pendant posts or for opening links on watch bracelets and chains. Prevents marring and bending out of shape.

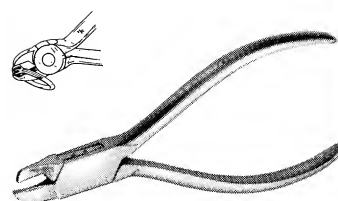
No.	Length	Each
37-082	5"	\$3.95



BRACELET LOOP CLOSING PLIERS

Jaws are hollowed out for closing small loops, bows, jump rings, chain links, etc., without marring or twisting.

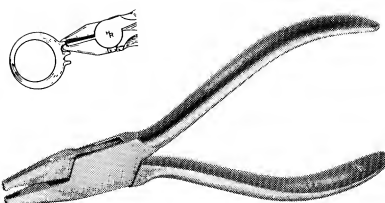
No.	Length	Each
37-083	5"	\$4.60



STONE SETTING PLIERS

For setting and tightening stones. Ends fit over prongs in setting.

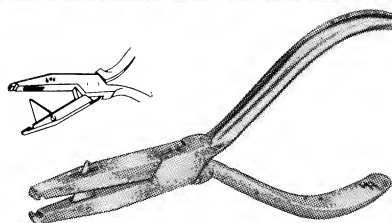
No.	Length	Each
37-185	5"	\$4.25



CLAW STRETCHING PLIERS

Used for stretching, repairing and straightening ring claws.

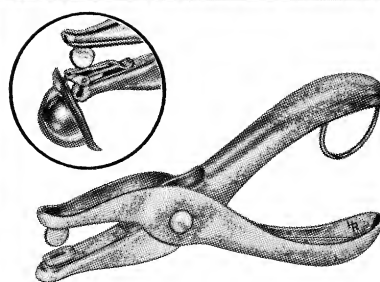
No.	Length	Each
37-195	5 1/2"	\$4.25



LADIES WATCH BRACELET LINK OPENING PLIERS

Has a wedged shaped tooth, 1/4" at base, for opening bracelet end links even when watch is attached. Has grooved tips for closing and relocking.

No.	Length	Each
37-084	5"	\$4.95



EARRING PLIERS

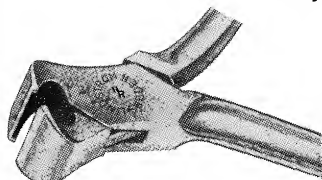
For loosening or tightening the tension bar on practically all types of clip-on earrings. Will not slip or damage the finding.

No.	Length	Each
37-087	5"	\$2.95

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

OPTICAL PLIERS

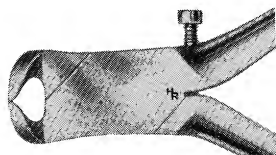
Precision made, high quality tools designed primarily for use by opticians but useful for other intricate work requiring gripping, manipulating, pulling and cutting. All have "Box Joints", and handles are specially finished to provide a good grip — all supplied with a plated finish to prevent rust.



CHAPPEL NIPPERS

Have Full-Flush cutting edges that cut straight across, leaving no peak, with built-in stops to preserve the cutting edge. For soft metals.

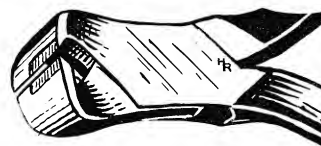
No.	Length	Each
37-500	4"	\$5.45



END CUTTING NIPPERS

Have Full-Flush cutting edges that cut straight across, leaving no peak, with screw stop to protect the cutting edge. For soft metals.

No.	Length	Each
37-501	4"	\$5.25



COMBINATION END CUTTING NIPPERS

Has Full-Flush cutting edges that cut straight across and regular edges for heavier work. Made for soft metals.

No.	Length	Each
37-504	4"	\$5.50



CHAIN NOSE PLIERS

Popular snipe nose pliers for making bends, loops and similar forming operations on wire or sheet metal. Jaws are smooth and finely polished.

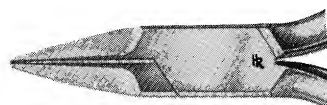
No.	Length	Each
37-550	5 1/4"	\$4.40



OFFSET CHAIN NOSE PLIERS

Offset jaws for making bends, loops and similar forming operations on wire or sheet metal. Jaws are smooth and finely polished on inside.

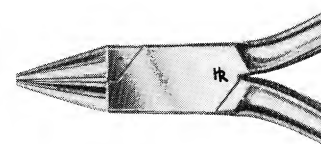
No.	Length	Each
37-552	5 1/2"	\$4.60



FLAT NOSE PLIERS

For gripping, holding and making angular bends. Jaws are smooth and finely polished on the inside.

No.	Length	Each
37-554	5 1/4"	\$4.40



ROUND NOSE PLIERS

For making bends, loops, circles, coils and similar forming operations on wire or sheet metal. Have round polished jaws.

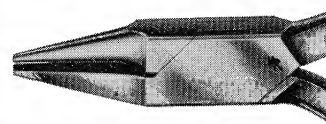
No.	Length	Each
37-556	5 1/4"	\$5.00



FLAT AND HALFROUND NOSE PLIERS

One jaw is flat and the other is curved with all sides smooth and finely polished. Width of jaws 1/4".

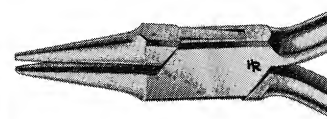
No.	Length	Each
37-558	5 1/4"	\$4.60



FLAT AND ROUND NOSE PLIERS

One jaw is flat and other is round. Jaws taper to a fine point with all sides smooth and finely polished.

No.	Length	Each
37-560	5 1/4"	\$5.70



ROUND AND HOLLOW NOSE PLIERS

One jaw is round and other is concave. Jaws taper to a fine point with all sides smooth and finely polished. For making bends.

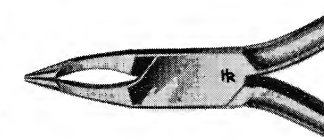
No.	Length	Each
37-562	5 1/4"	\$6.15



HOLLOW CHOP PLIERS

Concave, convex jaws for making bends. Jaws have sides that are smooth and polished.

No.	Width	Length	Each
37-564	4.00mm	5 1/4"	\$5.70
37-566	6.00mm	5 1/4"	5.70
37-569	9.00mm	6"	6.35



PARALLEL TIP PLIERS

Used to force thin pins into position, with cut-away jaws for tight places and to avoid chipping spectacle lenses. Polished jaws.

No.	Length	Each
37-574	5 1/4"	\$4.60



ADJUSTING PLIERS

Holds frame or mounting behind strap or eye wire. Allows bending without loss of alignment. Jaws are smooth and polished.

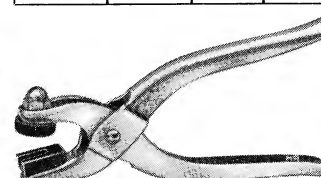
No.	Length	Each
37-578	5 1/4"	\$4.60



FINGERPIECE TRUING PLIERS

Recesses in jaws for gripping screws of fingertiece mountings. Two pair often used for adjusting a bridge. Polished jaws.

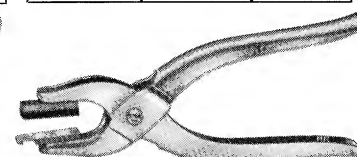
No.	Length	Each
37-586	5 1/4"	\$5.00



WRAP AROUND FRAME PLIERS

Grooved jaw fits over hinge barrel to prevent distortion as frame is bent. Rubber jaw protects jewelry trimming.

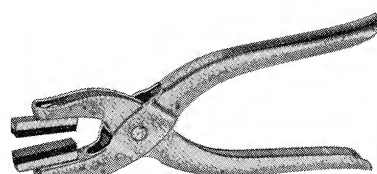
No.	Length	Each
37-521	6"	\$4.50



VERTICAL HINGE HOLDING PLIERS

For gripping vertical (5 or 7 barrel) hinges while angling the frame. Rubber jaw protects the frame.

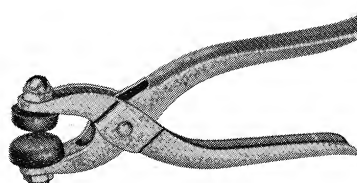
No.	Length	Each
37-522	6"	\$5.25



ZYL ANGLING PLIERS

Rubber jaws bonded to steel protect Zyl frames when angling the temple. The jaws are 7.0mm wide and are parallel when opened to 2.00mm.

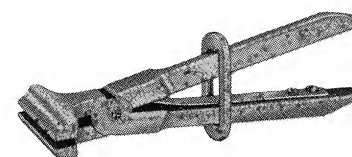
No.	Length	Each
37-520	6 1/2"	\$4.50



LENS ALIGNING PLIERS

For aligning the lens to correct axis. Rubber grips bonded to metal conform to all lens curves.

No.	Length	Each
37-524	6 1/2"	\$5.25

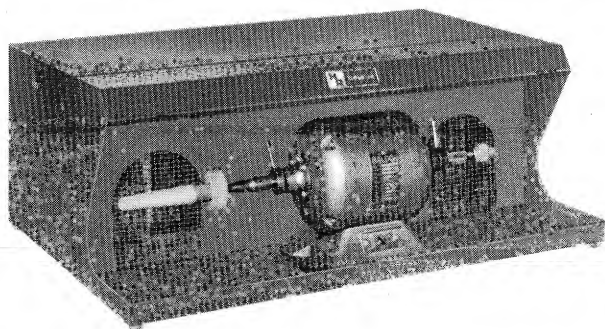


CHIPPING PLIERS OR TONGS

Have serrated jaws for chipping excess glass from lenses after cutting. Also used as a hand vise.

No.	Length	Each
37-510	6"	\$5.50

POLISHING EQUIPMENT AND ACCESSORIES



HR SUPERIOR DOUBLE SPINDLE DUST COLLECTOR

- Large Intake Holes
- Powerful Suction
- Big Working Area
- Bright, Shielded Lighting
- Filter Protected Fans

Designed specially for the work bench of Jewelry Stores, Lapidarists, Jewelry Manufacturers and all who do grinding, polishing, buffing, etc. of light and precious metals.

The HR Superior Double Spindle Dust Collector has big intake holes positioned behind the arbor shafts so that even the longest ring buff can be used. It's hood is designed to provide maximum air movement and create a powerful suction so that dust, lint, polishing powders, filings, etc., are quickly removed from the air thereby keeping the store or shop clean.

Another special feature is the positioning of the filters ahead of the blower wheels so that dirt and filings never come in contact with the wheels or motor, thereby eliminating costly repairs and decreased suction from clogged moving parts. All filters can easily be reached for removal, replacement, or cleaning by removing the top hatch.

The HR Superior Dust Collector also has a large working area that will take wheels of 6" diameter, is well lighted so that the finest detail is not lost in shadows, and has a convenience outlet in the front panel for the polishing motor.

SPECIFICATIONS

Dimensions — 10" High x 28" Wide x 20" Deep.

Shipping Weight — Without motor 45 lbs.

Filters — Spun Glass...Two 10"x10"x1" and one 10"x20"x1"...replacements are available.

Lighting — Supplied by two elongated 40 watt incandescent bulbs over the intake holes.

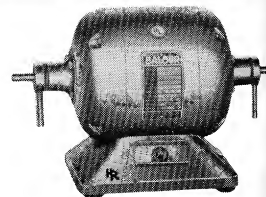
Finish — Grey hammertone treated to resist corrosion.

Polishing Motor — Choice of single or two speed Baldor motor...see motor specifications.

TO ORDER

No.	Description	Price
31-160	Dust Collector Only (no polishing motor)	\$118.20
31-161	Dust Collector with No. 31-153 Baldor 1/4 hp 1-Speed	177.20
31-162	Dust Collector with No. 31-152 Baldor 1/2 hp 2-Speed	187.70

Note: Price does not include chucks, and units are shipped F.O.B. New York City.

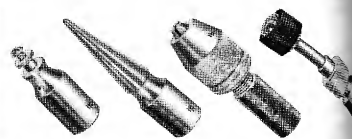


BALDOR POLISHING MOTOR

Heavy duty motors with sealed, dustproof bearing movements that require no lubrication. Special chuck removers permit changing chucks without stopping the motor. Shafts hardened to prevent wear, accurately ground to accommodate standard chucks, and wobble because there is no end play in the armature. Both use 115 volt AC 60 cycle current and weigh approx. 28 lbs. No. 31-152 a 1/2 hp resistor phase motor with speeds 1725 rpm and 3450 rpm. No. 31-153 has 1 hp single phase motor with 3450 rpm.

Note: Price of motor does not include chucks.

No.	Description
31-152	1/2 hp 2-Speed (1725 & 3450 rpm)
31-153	1/4 hp 1-Speed (3450 rpm)



Hard Wheel Soft Wheel Bur Arbor

BALDOR CHUCKS

Precision machined, within extremely close tolerances, to reduce vibration to a minimum and assure a perfect fit on all standard tapered shafts. Hole diameter .370" tapered at rate of 1/4" per foot.

No.	Style	Shaft	Metal
31-788	Hard Wheel	Right	Brass
31-789	Hard Wheel	Left	Brass
31-790B	Soft Wheel	Right	Brass
31-790S	Soft Wheel	Right	Steel
31-791B	Soft Wheel	Left	Brass
31-791S	Soft Wheel	Left	Steel
31-792	Bur	Right	Brass & Steel
31-793	Arbor Band	Right	Brass



TAPER SPINDLES

Designed to fit any straight shaft motor. Held to shaft by either right or left handed threads. Held to shaft by two set screws. Threads clear and deep. Length 4 1/4".

No.	Description	Price
31-781	For 1/4" shaft	
31-782	For 3/8" shaft	
31-783	For 1/2" shaft	\$1.40
31-784	For 3/4" shaft	
31-785	For 1" shaft	

Specify Order No. and Right or Left in ordering.



HANDLE WITH CHUCK

Used to hold small wheels on arbors. Handle has been bored and reinforced to fit a taper spindle. Length 3 1/4".

No.	Capacity	Price
27-062	.085" to .128"	\$1.10

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

K&D POLISHING
Rugged variable speed grinding. Double seal life and will not burn on rubber feet for the bench. Comes complete with taper spindles.

- 1/2 hp at 5000 RPM
- Dial power rheostat 2000 to 10,000
- Uses 115 Volt AC
- 3/8" polished drill
- Double sealed bearings

No.	Price
31-155	

HR SUPERIOR COMPOUND IN PEEL-BALANCE

- Eliminates mess
- Keeps hands clean
- Does away with
- Exposes rough
- Each label a quick identifier

RED — for production lustre on Gold, Silver, Water Soluble metals such as Gold, Silver, etc. makes it easy to clean heavily indented or scratched metal.
YELLOW — a dry compound such as Platinum. Leaves little residue.
BLACK — produces a fine, smooth finish on Gold, Platinum or Silver.
GREEN — imparts a hard metal such as Chromium or Platinum.
WHITE — a quick polish on all hard metals.
CHROME — a fast polish on Brass, Copper, Iron, etc.
TRIPOLI — a fine polish on all metals where a final finish is required.

No.	Price
52-421	
52-422	
52-423	
52-424	
52-425	
52-426	
52-427	
52-428	
52-429	

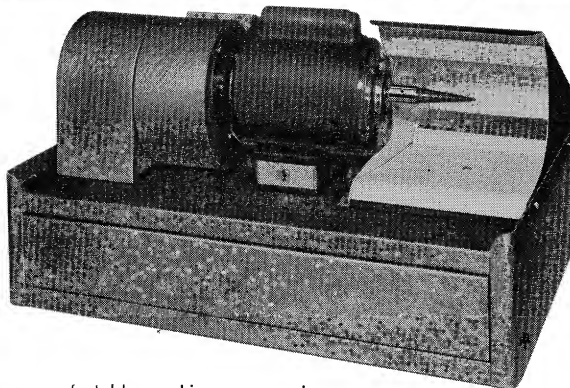
SET
Contains the water soluble compound of tripoli.

No.	Price
52-430	



POLISHER AND DUST COLLECTOR

- No messy dust bag... uses standard filter.
- Operates on 1/2 h.p. GE motor.
- Easy to cash in on your polishing dust.
- Powerful suction fan keeps dust out of your lungs and your store.



Easy to work — The low hood allows comfortable working area and assures unrestricted flow of air past the buff. Indirect concealed light source illuminates your work, but does not shine in your eyes.

Powerful — Stronger suction than dust collectors priced much higher because suction fan uses the same 1/2 h.p. motor that operates the spindle...comes complete with 4 1/2" tapered spindle.

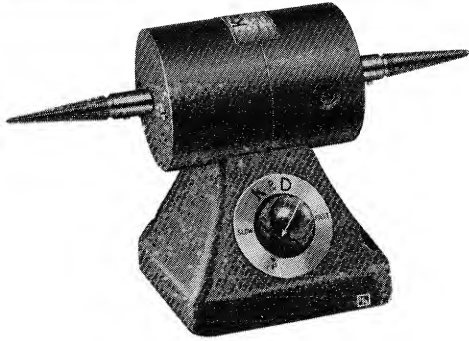
Pays for itself — Cash in on your polishing dust. To reclaim precious dust remove and place filter paper on a sheet of metal, ignite and send ashes to a refiner. The oil saturated filter can be purchased locally or from us.

Trouble Free — Filter is located between the fan and the buff so that no dust, lint, rouge, threads or filings can clog or foul the suction fan or motor. Reliable GE motor and sturdily built unit makes this dust collecting system free from trouble indefinitely.

No.	Description	Price
31-157	FOB factory in Illinois	\$139.95

SPECIFICATIONS

- Width 27 1/2"
- Depth 20"
- Height 15"
- 3450 RPM
- 1/2 hp, 110-120V AC 60 cycle motor
- Shipping Wt. 80 lbs.



K&D POLISHING MOTOR

Rugged variable speed motor for polishing, buffing and grinding. Double sealed ball bearings are lubricated for life and will not burn out under repeated loading. Mounted on rubber feet for portable use, or it can be bolted to the bench. Comes complete with right hand and left hand taper spindles.

SPECIFICATIONS:

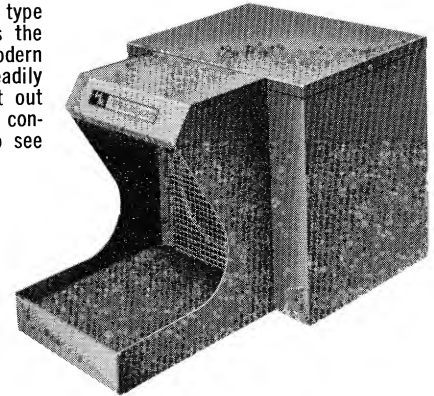
- 1/8 hp at 5000 RPM's under load.
- Dial power rheostat for infinite speed control from 2000 to 10,000 RPM's under load.
- Uses 115 Volt AC 60 cycle current.
- 3/16" polished drill rod shaft.
- Double sealed ball bearings.

No.	Description	Each
31-155	Has black crackle finish	\$39.50

ECHARGO DUST COLLECTOR

Enjoy a clean, dust-free shop... Drum type suction fan keeps air clean and absorbs the flying dust, lint and polishings. Has a modern efficient fiberglass filter which can be readily replaced when saturated. Keeps the dust out of your lungs, provides healthier working conditions. Light under hood enables you to see finest details.

Designed to be positioned behind your present polishing motor, this compact unit can be readily moved from one polishing wheel to another. Fits any standard work bench. Operates on 110 Volt, 60 cycle AC current. Suction fan is specially designed to move air quietly. Fully enclosed in heavy gauge steel housing, attractively finished in a hamertone gray.



compact • portable • quiet operating
10" x 10" x 17 1/2" deep

No.	Description	Each
31-159A	Complete with filter, ten foot cord and plug	\$52.50

SUPERIOR POLISHING COMPOUNDS IN PEEL-BACK TUBES



- Eliminates mess.
- Keeps hands clean.
- Does away with broken bars.
- Exposes rouge only as needed.
- Each label a different color for quick identification.

RED — for producing the final high color or lustre on Gold, Silver or other soft metals.

WATER SOLUBLE RED — for high color on soft metals such as Gold or Silver. Special formula makes it easy to clean articles with filigree or heavily indented designs.

YELLOW — a dry compound for hard metals such as Platinum, Chrome, Stainless Steel. Leaves little residue on work.

BLACK — produces a rich, dark lustre on White Gold, Platinum or Silver.

GREEN — imparts a beautiful high lustre on hard metals such as Chrome, Stainless Steel, or Platinum.

WHITE — a quick polishing compound for use on all hard metals such as Stainless Steel, Chrome or Platinum.

CROCUS — a fast cutting compound used on Brass, Copper, Iron, Steel or other metals in preparation for the final finish.

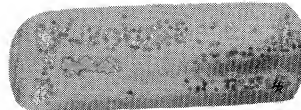
TRIPOLI — a fine cutting abrasive for use on all metals where red rouge will be used for a final finish.

No.	Style	Weight	Tube
52-421	Red	8 oz.	\$0.65
52-422	Water Soluble Red	8 oz.	.65
52-423	Yellow	6 oz.	.65
52-425	Black	7 oz.	.65
52-426	Green	6 oz.	.65
52-427	White	5 oz.	.65
52-328	Crocus	8 oz.	.50
52-524	Tripoli	4 oz.	.50

SET IN CARDBOARD BOX

Contains the four most used compounds, red, water soluble red and yellow rouges and tube of tripoli.

No.	Description	Set
52-420	Set of 4	\$2.40



ROUGE STICKS

First quality hard rouges provide a variety of finishes for many different metals.

RED — standard jewelers rouge for protecting high color or lustre on Gold, Silver and other soft metals. XXG quality.

BLACK — produces a rich, dark lustre on White Gold, Platinum and Silver.

GREEN — produces a beautiful high lustre on hard metals such as Chrome, Stainless Steel and Platinum.

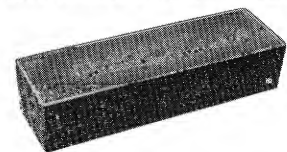
WHITE — a quick polishing compound, W54 quality for Platinum, Stainless Steel and Chrome.

YELLOW — a dry compound for hard metals such as Platinum, Stainless Steel and Chrome. Leaves little residue on work.

YELLOW XX GRADE — produces a mirror finish on Platinum, Stainless Steel and Chrome. Leaves little residue on work.

PINK — a specially prepared fast cutting compound for polishing Platinum. Produces a high lustre.

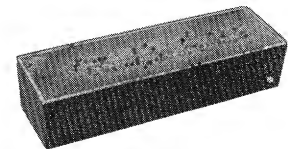
No.	Style	Weight	Stick
52-404	Red	1/4 lb.	\$0.30
52-405	Red	1/2 lb.	.45
52-410	Red	1 lb.	.80
52-450	Red	1/8 lb.	.25
52-443	Black	1/4 lb.	.30
52-447	Green	1/4 lb.	.60
52-454	White	1/4 lb.	.45
52-457	Yellow	1 3/4 lb.	1.25
52-458	Yellow	1/2 lb.	.50
52-459	Yellow XX	1/2 lb.	.60
52-465	Pink	1/2 lb.	1.00



BOBBING COMPOUND

A fast cutting compound for brush or wood lap work, recommended for filigree.

No.	Weight	Each
52-340	1 1/4 lb. cake	\$0.45



TRIPOLI

REGULAR

Standard jewelers tripoli for cutting or abrasive action when rouge will be used as a final finish. Leaves metal scratch free, but dull in appearance.

No.	Weight	Each
52-501	1 lb. cake	\$0.35
52-502	1/4 lb. cake	.25

WHITE DIAMOND TRIPOLI

A fast cutting abrasive compound that leaves some degree of color.

No.	Weight	Each
52-505	1 lb. cake	\$0.50

PLATINUM TRIPOLI

Rapid cutting abrasive compound, especially recommended for platinum and other hard metals.

No.	Weight	Each
52-508	1 lb. cake	\$0.50

X-REFERENCE: Brushes, Page 12 Buffs, Page 14

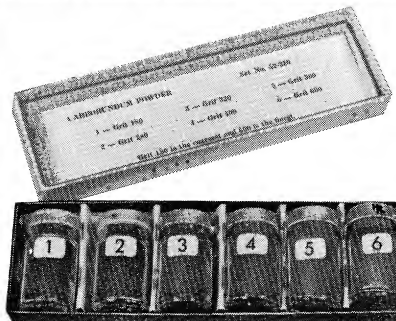
POLISHING SUPPLIES

POLISHING COMPOUNDS

A wide selection of powders for cutting and polishing Gold, Silver, Platinum, Brass, Copper, Aluminum, Steel, Precious Stones, Glass, Wood, etc.



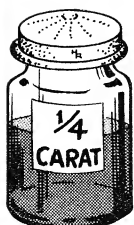
No.	Type	Use	Each
IN 2 OZ. BOX			
52-220	Crocus	Steel-Brass	\$0.30
52-222	Emery, fine	Steel-Stones	.30
52-223	Emery, med.	Steel-Stones	.30
52-224	Emery, coarse	Steel-Stones	.30
52-230	Oilstone, very fine	Steel	.35
52-231	Oilstone, fine	Steel	.35
52-240	Pumice	Metal-Wood	.30
52-241	Putty	Stones-Glass	.90
52-243	Rottenstone	Brass-Steel	.30
52-250	Red Rouge	Gold-Silver	.35
52-260	Green Rouge	* Platinum	.40
52-280	Tripoli	Brass-Copper Gold-Silver	.30
IN 1 LB. BAG			
52-255	Red Rouge	Gold-Silver	.80
52-265	Green Rouge	Platinum	1.80
52-285	Tripoli	Brass-Copper Gold-Silver	.50



SILICON CARBIDE

Next to diamond dust, silicon carbide is the best cutter known for grinding and lapping all hard substances. Set contains six grades to cover every cutting polishing, and finishing requirement.

No.	Description	Set
52-210	Set of 6 1/4 oz. bottles	\$2.40



DIAMOND COMPOUND IN OIL

Fastest cutting abrasive for all hard metals and precious stones. Fine grit will be supplied unless otherwise specified.

No.	Size	Bottle
52-125	1/4 Carat	\$2.40



DIAMANTINE

A fast cutting abrasive for polishing precious and semi-precious stones, and for cutting and polishing steel. Packaged in 3/4 oz. bottles.

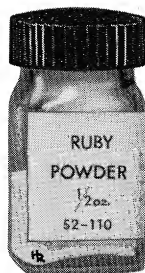
No.	Description	Bottle
52-101	Cutting	\$1.00
52-102	Polishing	1.00
52-103	Finishing	1.00



SAPPHIRINE

An abrasive polishing material for use on hard metals such as steel. Similar to Diamantine, but coarser and sharper.

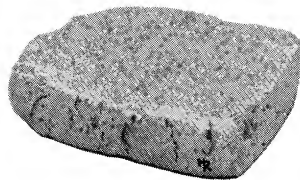
No.	Size	Bottle
52-106	3/4 oz.	\$1.00



RUBY POWDER

For polishing the following items to a high finish: Platinum, Gold, Pearl, Ivory, Horn, Shell and Porcelain.

No.	Size	Each
52-110	1/2 oz. bottle	\$1.00
52-113	1 1/10 lb. bag	6.00



SILVERENE

A white chalky material used to polish watch and instrument parts. Will not scratch, absorbs dirt and grime and imparts a smooth finish.

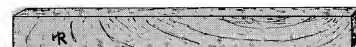
No.	Size	Cake
52-148	2 3/4" x 1 1/4" x 1/2"	\$0.50



KNIFE EDGE WOOD LAP

Used with abrasives and sometimes rouge for cutting and polishing joints. Close grained wood has a hole for taper spindle.

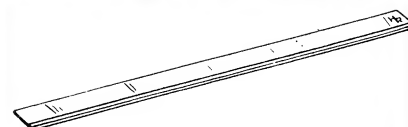
No.	Diam.	Price
14-491	3"	\$0.55



BOXWOOD SLIPS

For use with polishing compounds. Made of extra hard, fine quality boxwood the slips measure approximately 7" long.

No.	Size	Shape	Each
38-412	1/8"	Square	\$0.15
38-413	3/16"		.15
38-414	1/4"		.15
38-416	3/8"		.15
38-418	1/2"		.20
38-419	3/4"	Round	.30
38-428	1 1/2"		.25



BELL METAL SLIP

Brass blade that can be charged with polishing paste for polishing pivots.

No.	O. L.	Price
15-060	6"	\$0.45



WOOD POLISHING BLOCK

Has three compartments stacked one-on-top of the other with steel disc bases. For mixing and storing polishing materials such as Diamantine, Crocus Powder, Oilstone Powder, etc.

No.	Dimensions	Set
38-401	3" x 2 1/2"	\$2.75



POLISHING STICK

For finishing and polishing small parts. Rubber composition stick is loaded with Diamantine. Comes in plastic holder.

No.	Dimensions	Each
35-502	5" x 3/16"	\$0.60

X-REFERENCE: Brightboys Page 108.

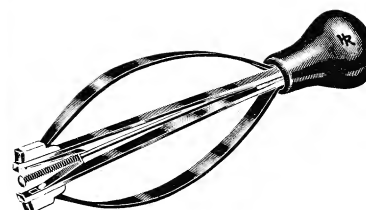
PRICES SUBJECT TO CHANGE WITHOUT NOTICE



K&D HAND REMOVERS

Sturdy, quick acting tools, in 3 sizes, for removing all types of hands from watches and instruments without harming the dial or mechanism. Hands are removed by pushing downward on the plunger type handle. Nos. 39-310A/310B have a centerpost guide for use on precision instruments.

No.	Hand Size	Jaw Opening	Each
39-310A	Medium	3/8"	\$4.80
39-310B	Very Small	5/16"	4.80
39-417	Large	5/8"	7.50



PRESTO HAND REMOVER

For bracelet watches, tiny instruments and gauges. When side springs are pressed, jaws retract, pulling off hands. Center plunger holds hands after removal and fibre pushers do not mar dials.

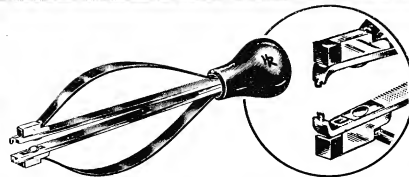
No.	Jaw Opening	Each
39-301	3/16"	\$4.80



PRESTO CANNON PINION REMOVER

For removing all sizes of cannon pinions, as well as hands for large watches. Has fibre pushers to prevent marring.

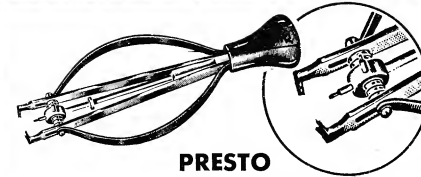
No.	Jaw Opening	Each
39-202	3/16"	\$4.70



PRESTO SECOND HAND REMOVER

For removing both regular and sweep second hands. Thin narrow jaws will reach down into countersunk dials. Has fibre pushers.

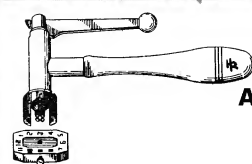
No.	Jaw Opening	Each
39-306	3/16"	\$4.70



PRESTO TURRET HAND REMOVERS

Removes hands without touching dial by using center post for support. Turret has 4 pushers. No. 39-404 is for heavy duty.

No.	Jaw Opening	Each
39-307	3/16"	\$7.00
39-404	3/16"	6.50



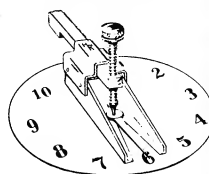
M&S HAND AND CANNON PINION REMOVERS

Grooved vise like jaws grasp hands or cannon pinion when lever is pushed. Fibre base protects dial and mechanism. No. 39-302 removes cannon pinions as well as hands.

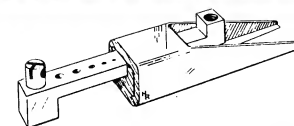
No.	Jaw Opening	Each
39-302	1/16"	\$6.00
39-315	3/32"	5.15

ARLINGTON CLOCK HAND REMOVERS

Has a V-slot which slips under the clock hand. The threaded pusher pulls hand away from the post.



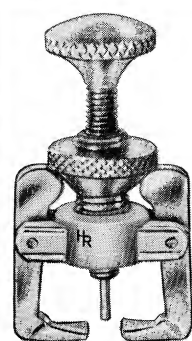
No.	Jaw Opening	Each
39-408	1/4"	\$7.95
39-409	5/16"	8.50



ARLINGTON HAND AND SMALL GEAR REMOVER

Pulls clock hands and gears. Extra features include sliding shaft with graduated holes for use as a bench block or stump holder. Also may be used as a balance wheel stand.

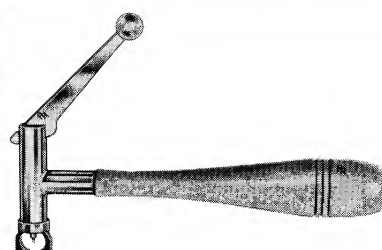
No.	Jaw Opening	Each
39-412	3/16"	\$9.50



ROWES HEAVY DUTY HAND AND GEAR PULLER

For all types of clocks and instruments. Jaws are adjustable to fit over hand and always keep pusher centered. Screw pressure pulls hand away from post. Does not touch dial or mechanism.

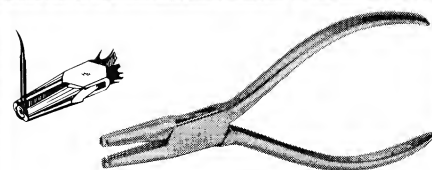
No.	Jaw Opening	Each
39-402	3/16"	\$3.65



M&S INSTRUMENT AND CLOCK HAND REMOVER

Jaws may be opened (maximum 1/4") or closed (recommended minimum 1/16") by turning. When jaws have been adjusted under hand the lever is pressed and the plunger pushes on the center post forcing the hands off. Does not touch dial.

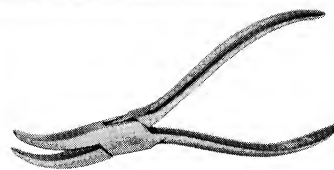
No.	Jaw Opening	Each
39-415	1/4"	\$6.60



CLOCK HAND REMOVING PLIERS

Slot in front end of jaws fits over hand hub. Sure, fast way to pull hands without touching dial.

No.	Length	Each
37-042	5"	\$4.60



CLOCK HAND REMOVING PLIERS

Provides extreme leverage when prying off clock hands or other parts. Slot in curved jaw fits under part while top jaw clamps on top.

No.	Length	Each
37-043	5"	\$4.15



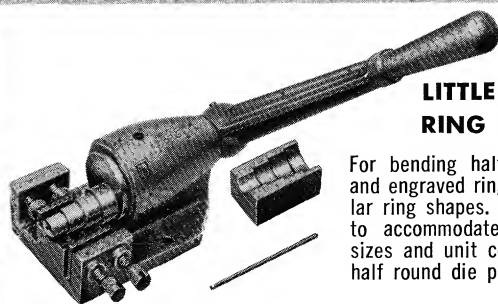
HAND REMOVER

Screw pressure forces hands away from post. Does not touch dial or rest of mechanism.

No.	Jaw Opening	Each
39-401	1/8"	\$1.10

X-REFERENCE: Other Removers Pages 121 to 123.

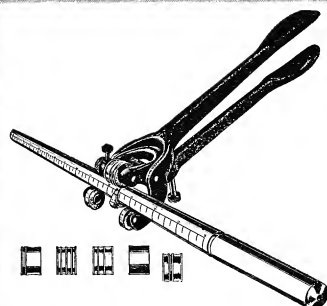
RING TOOLS



LITTLE GIANT RING BENDER

For bending half round, flat, oval and engraved ring blanks into circular ring shapes. Mandrel is stepped to accommodate the various ring sizes and unit comes with flat and half round die plates.

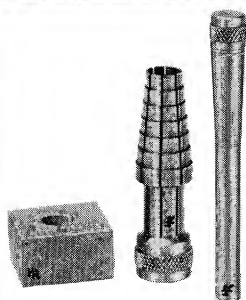
No.	Description	Set
39-609	Ring Bender and 2 Die Plates	\$67.50



L.B. RING SIZER

Enlarges rings by rolling (white gold up to a full size...yellow gold, silver, and platinum up to three sizes). Does not weaken ring or loosen stones, used with any standard steel mandrel. Comes with five dies which will fit the twelve most used shanks including the new knife edge, square and extra thin.

No.	Description	Set
39-610	Without Mandrel	\$27.50



RATHBUN RING STRETCHER

New, improved model for enlarging both ladies and gents rings. Simple and easy to use, just place ring on grooves of stretcher, insert the mandrel and drive it down until the desired size is obtained. Mandrel is removed by tapping the opposite end.

No.	Description	Set
39-611	Complete with Wood Base	\$9.40

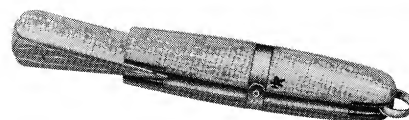


KAGAN RING SIZER

Quickly reduces and enlarges wedding rings several sizes without resorting to the old fashioned cut-file solder method. The Kagan Ring Sizer is so simple to operate that anyone in your store or shop can use it after only a little practice.

The new improved enlarging mandrel has 8 splines and takes rings up to size 14. The reducer plate reduces the whole surface up to and including 8mm, 10mm and 12mm rings. It helps build sales, reduces and moves your inventory, and saves time and money on sizing jobs. Weight approx. 17½ lbs.

No.	Description	Each
39-614	With Reducing Plate	\$159.75



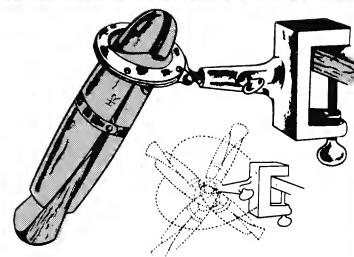
RING CLAMP

A double end ring clamp with leather lined jaws that holds rings securely while filing, polishing, stone setting, and other operations. Made of polished hardwood, it is tightened by inserting a wedge in the opposite end.

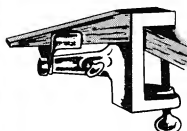
No.	Length	Set
39-605	6½"	\$1.75

COMBINATION RING CLAMP AND BENCH PIN

Turn it! Twist it! Choose any position you want!



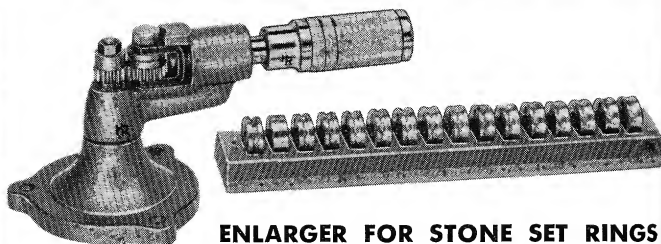
Here is a ring clamp that doesn't have to be jammed tightly against the bench or bench pin causing fatigue and strain on the hand, wrists, and arm. A gentle, but firm grip is all that is necessary to hold it in the correct working position even at awkward angles. You'll turn out much finer work in a shorter period of time. To inspect, polish, measure or compare your work just loosen the smaller thumb screw and slide the ring clamp from its socket.



A DUAL PURPOSE TOOL

The sturdy bench pin attachment on the left is also a part of the set. It too has the special sliding rod that insures quick, easy installation and removal.

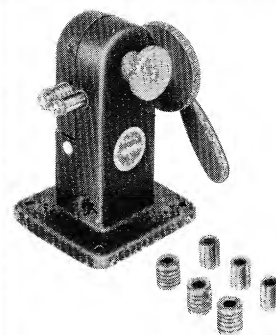
No.	Description	Price
11-283	Complete Set	\$12.95
11-253	Replacement Bench Pin	.35



ENLARGER FOR STONE SET RINGS

Has 17 rollers for the different sizes and styles of stone set rings such as: signet, diamond engagement, etc. The rollers can also be used on regular round type wedding bands. Easy to use, economical in price. Grooves of the rollers are polished to prevent damage.

No.	Description	Set
39-618	With 17 Rollers	\$24.95



KAGAN RING ROLLER

The parallel rollers enlarge stone-set rings quickly and easily, and with complete safety to the stones and mountings. The stone is not disturbed, the head is not touched—only the shank is expanded. Comes complete with the following dies: 4 Plain—1 Gents Halfround—1 Ladies Halfround—1 Knife Edge—and 1 Flat Ladies and Gents combined. Weight approx. 10 lbs.

No.	Description	Set
39-613	With 8 Dies	\$119.00

RING SIZES

Brightly plated, accurately gauged, and graduated in half sizes by U.S. Standard.

STANDARD

For measuring fingers for normal width rings. Nos. 24-524/524½ include sizes for the larger men's rings.



No.	Style	Numerals	Each
SIZES 1 TO 13			
24-504	Regular Flat	Colored	\$3.10
24-504½	Regular Flat	Plain	2.65
24-505	Half-round	Colored	3.35
SIZES 1 TO 16			
24-524	Regular Flat	Colored	4.25
24-524½	Regular Flat	Plain	3.95

WIDE

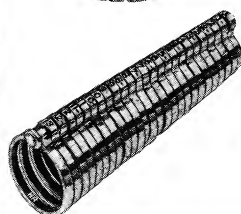
For measuring fingers for extra wide and heavy rings. Graduated by half sizes from 1 to 15.



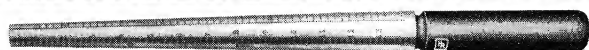
No.	Style	Numerals	Each
24-506	Regular Flat	Plain	\$7.50
24-507	Half-round	Plain	7.75

POCKET

Fits in your pocket so that it is available when needed. Easy to find and select a particular size because colored numerals are always in view. Accurately gauged in half size from 1 to 13.



No.	Style	Numerals	Each
24-508	Regular Flat	Colored	\$3.35



RING MANDRELS

Used for straightening, enlarging, gauging and modeling rings. Made of hardened tool steel.

No.	Style	Each
32-606	Regular	\$7.50
32-609	Grooved	8.00
32-608	Plain	6.40

RING STICKS

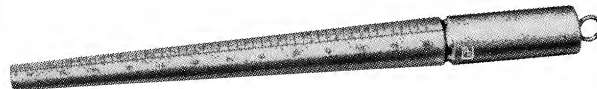
Used for gauging the size of rings. Graduated by quarter sizes according to U.S. Standard. Models available with groove for stone set rings.



HOLLOW METAL

Have wood handles and tip, and gauge showing lengths of material needed to make ring.

No.	Style	Each
SIZES 1 TO 13		
24-502	Regular	\$5.50
24-503	Grooved	6.50
SIZES 1 TO 15		
24-512	Regular	6.75
24-513	Grooved	8.00



ALUMINUM

Made of solid aluminum. Measures sizes 1 to 13 by quarter sizes.

No.	Style	Each
24-510	Grooved	\$4.25
24-514	Regular	3.95



PLASTIC

Hollow — Measures sizes 1 to 15 with gauge to show length of material needed to make ring.

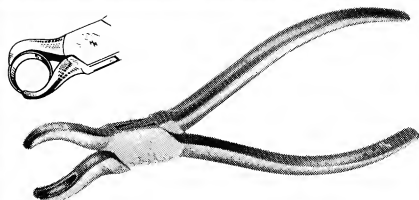
No.	Style	Each
24-515	Grooved	\$4.00



PLASTIC

Solid — Economical, measures sizes 1 to 13.

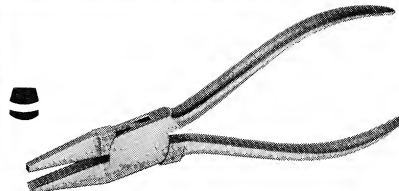
No.	Style	Each
24-517	Grooved	\$2.00



RING HOLDING PLIERS

Has grooved jaws that are useful to hold rings during filing and polishing.

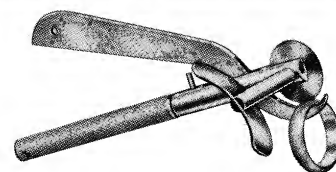
No.	Length	Each
37-105	5½"	\$3.90



RING BENDING PLIERS

Curved jaws are used for holding, straightening and bending rings.

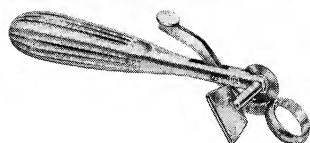
No.	Length	Each
37-109	5½"	\$3.90



RING CUTTER

Lightweight model with knurled non-slip handle. Completely nickel plated with exception of the saw.

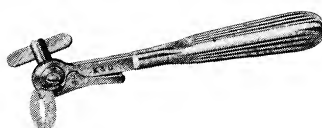
No.	Length	Each
40-102	5"	\$5.50



BEAVER RING CUTTER

Cuts rings off finger rapidly. Cutter is enclosed and entire tool can be sterilized. Has satin chrome finish.

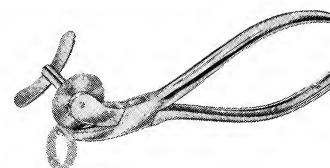
No.	Length	Each
40-103	6¼"	\$12.50



K&D RING CUTTER

For cutting rings, even when on finger. Easy, certain rapid action. Cutter is entirely enclosed for protection. Has satin chrome finish.

No.	Length	Each
40-100A	5½"	\$7.80



RING CUTTER

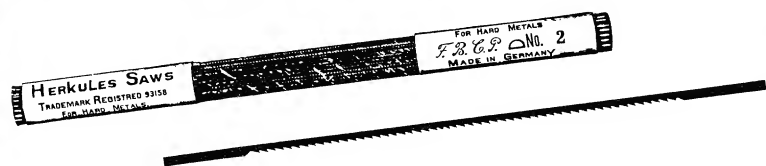
Plier style cutter that enables you to get a firm grip on the ring. A few turns of the saw will cut most rings.

No.	Length	Each
40-101	7"	\$7.25

SAWS

HERKULES "WHITE LABEL" SAWBLADES

These high quality sawblades are made of a special alloy steel that has been hardened and tempered in electric furnaces. Teeth are uniform in size, shape and sharpness to assure fast, easy cutting. Blades are 5 1/4" long and can be used on hand and power driven machines that have a blade clamping device.



PIERCING SAWS

For cutting all metals, bone, pearl and similar hard substances. The round backs make it easy to turn corners and follow curves... an operation where many other saws are broken.

No. 40-201—Available in sizes 8/0 to 14, specify size.

	Gross	Dozen
8/0 to 5/0	\$4.80	\$0.50
4/0 to 6	3.75	.50
7-8-10	4.80	.50
12-14	6.40	.65

FLAT SAWS

For heavy duty straight work. They are similar to hacksaw blades.

No. 40-251—Available in sizes 1 to 12, specify size.

	Gross	Dozen
1 to 12	\$6.40	\$0.75

SPIRAL SAWS

Cut in any direction. For use on rubber, plastics, plaster, wax and many other soft or pliable substances.

No. 40-261—Available in sizes 2, 3 & 4. Diameters are equivalent to the width dimensions under Piercing Saws. Specify size.

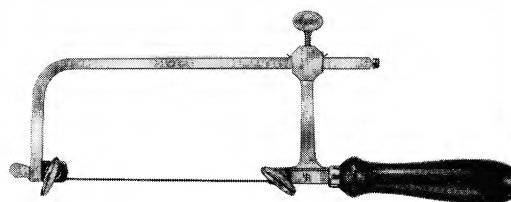
	Gross	Dozen
2 to 4	\$2.90	\$0.45

Size	Piercing		Flat	
	Thickness	Width	Thickness	Width
8/0	.0063"	.0126"	—	—
7/0	.0067"	.0130"	—	—
6/0	.0070"	.0140"	—	—
5/0	.0080"	.0157"	—	—
4/0	.0086"	.0175"	—	—
3/0	.0095"	.0190"	—	—
2/0	.0103"	.0204"	—	—
1/0	.0110"	.0220"	—	—
1	.0120"	.0240"	.0070"	.0290"
1 1/2	.0125"	.0250"	—	—
2	.0134"	.0276"	.0080"	.0340"
3	.0140"	.0290"	.0080"	.0370"
4	.0150"	.0307"	.0080"	.0430"
5	.0158"	.0331"	.0080"	.0510"
6	.0173"	.0370"	.0080"	.0590"
7	.0189"	.0400"	.0080"	.0670"
8	.0197"	.0440"	.0086"	.0750"
9	—	—	.0086"	.0830"
10	.0215"	.0510"	.0086"	.0950"
11	—	—	.0086"	.1060"
12	.0236"	.0650"	.0095"	.1180"
14	.0236"	.0690"	—	—

SUN BLEACHED BEES WAX

Used on sawblades to make cutting easier. Packaged in a handy plastic tube.

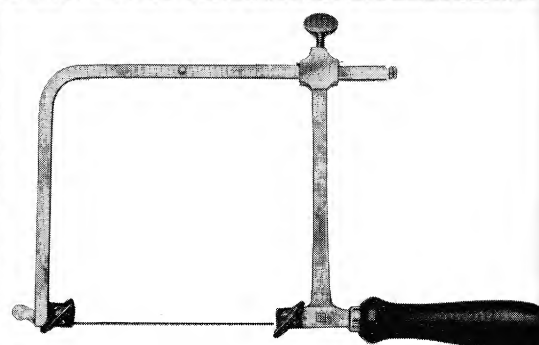
No.	Each
21-322	\$0.35



SAWFRAME

For use with Piercing, Flat and Spiral saw blades. Serrated clamps hold blades firmly, while adjustable frame draws the blade tight and also permits use of broken blades. Strongly constructed, with a flat steel frame, hardwood handle and thumb screw locking device.

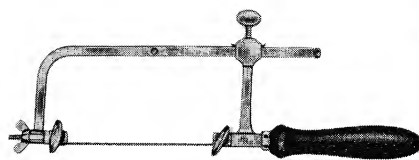
No.	Depth	Price
40-301	2 1/4"	\$2.50



DEEP SAWFRAMES

For use with Piercing, Flat and Spiral Sawblades... when greater cutting depth is required. Serrated clamps hold blades firmly while adjustable frame draws the blade tight and also permits use of broken blades. Strongly constructed, with a flat steel frame, hardwood handle and thumb screw locking device.

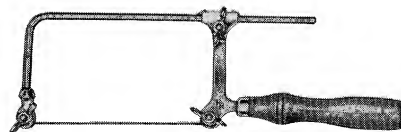
No.	Depth	Price
40-353	3"	\$3.75
40-354	4"	3.95
40-355	5"	4.25
40-356	6"	4.50
40-358	8"	4.75



END-SCREW SAWFRAMES

For use with Piercing, Flat and Spiral sawblades. Equipped with a tension thumb screw for drawing blades taut, and also permits the use of broken blades. Have polished steel frames and hardwood handles.

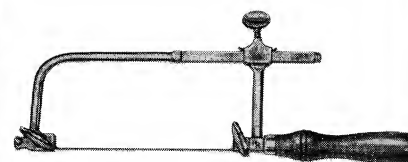
No.	Depth	Each
40-303	2 3/4"	\$3.35
40-313	3"	3.95
40-314	4"	4.25



ROUND SAWFRAME

For use with Piercing, Flat and Spiral sawblades. Has a strong rod frame that is made of steel and has been nickel plated, wing nut locking device, and hardwood handle.

No.	Depth	Each
40-305	2 3/4"	\$4.50



OVAL SAWFRAMES

For use with Piercing, Flat and Spiral sawblades. Have well balanced, polished steel frames, hardwood handles and thumb screw locking device. Strongly constructed, superior finished. No. 40-360 has serrated clamps for securing blade firmly.

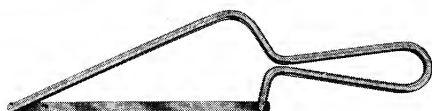
No.	Depth	Each
40-340	2 1/4"	\$4.50
40-360	2 1/2"	8.50



METAL BACK SAW

For cross-cutting, trimming and notching light metal and narrow gauge tubing. Rugged, thin blade with fine teeth, strong metal back and hardwood handle.

No.	O.L.	Blade	Price
40-055	9¾"	5"	\$1.10



HACKSAW

For cutting wood and plaster as well as most metals, especially in tight places. Rugged blade is mounted on a ¼" steel rod frame.

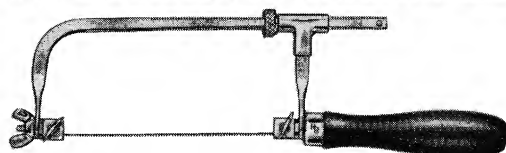
No.	O.L.	Blade	Price
40-392	9¾"	6" x ¼"	\$0.55 ea.
40-054	Blades Only		1.50 dz.



POISING SAW

Double edged sawblade, with tang for handle, that is used to enlarge or clear slots of miniature screw heads.

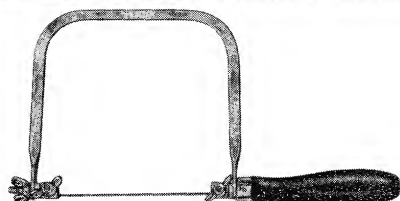
No.	Length	Each
40-070	3"	\$1.10



TROJAN ADJUSTABLE SAWFRAME

For use with Piercing, Flat and Spiral sawblades. Serrated clamps hold blade firmly so that it can be faced at any angle. Equipped with tension thumb screw for drawing blade taut. Steel frame is chrome plated, has a special threaded adjusting device, and hardwood handle.

No.	Depth	Each
40-350	2¾"	\$3.95

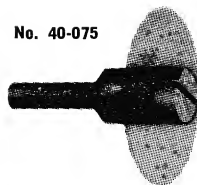


TROJAN DEEP SAWFRAME

For 5" blades. Equipped with tension thumb screw for drawing blade taut. Frame is made of steel, is nickel plated and has been fitted with a polished hardwood handle.

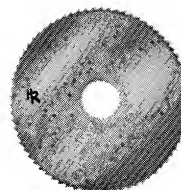
No.	Depth	Each
40-390	5"	\$2.50

No. 40-075



CIRCULAR SAWS

Extra fine tooth saws (also known as Jeweler's Slotting Saws) designed for work where precision tolerances and good finishes are required. Available in regular or high speed steels, they can be used on precision lathes or similar small machine tools.



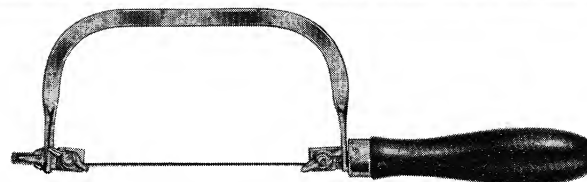
No.	Diameters		No. of Teeth	Thickness of Blade Inch and Equivalent Millimeter	Each
	Overall	Hole			
CARBON					
40-076B	1½"	.200"	60	.010"—.012"—.014"—.016"—.018" (0.24mm—0.30mm—0.35mm—0.40mm—0.45mm)	\$0.60
40-076C	⅝"		60		
40-076D	¾"		72		
40-076E	1"		72		
HIGH SPEED					
40-078D	¾"	.200"	80	.006"—.008"—.010"—.012" (0.15mm—0.20mm—0.25mm—0.30mm)	1.60
			64	.014"—.016"—.018"—.020" (0.35mm—0.40mm—0.45mm—0.50mm)	
40-078E	1"	.200"	100	.006"—.008"—.010"—.012" (0.15mm—0.20mm—0.25mm—0.30mm)	1.60
			80	.014"—.016"—.018"—.020" (0.35mm—0.40mm—0.45mm—0.50mm)	
40-078F	1¼"	⅝"	120	.008"—.010" (0.20mm—0.25mm)	1.80
			96	.012"—.016"—.020" (0.30mm—0.40mm—0.50mm)	
40-078H	1½"	¾"	160	.008"—.010" (0.20mm—0.25mm)	2.00
			128	.012"—.016"—.020"—.024" (0.30mm—0.40mm—0.50mm—0.60mm)	
40-078L	2"	¾"	200	.010" (0.25mm)	2.40
			160	.012"—.016"—.020"—.024" (0.30mm—0.40mm—0.50mm—0.60mm)	

Specify Order No. and Thickness of Blade when ordering.

ACCESSORY

Arbor for use with circular saws that have a mounting hole diameter of .200". Shank diameter of the arbor is .150".

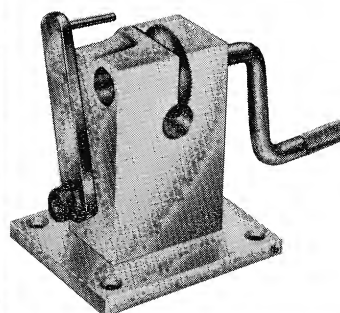
No.	Description	Each
40-075	For Circular Saws with .200" Hole Diameter	\$0.85



TROJAN SAWFRAME

For 5" blades. Equipped with tension thumb screw for drawing blade taut. Frame is made of steel, is nickel plated and has been fitted with a polished hardwood handle.

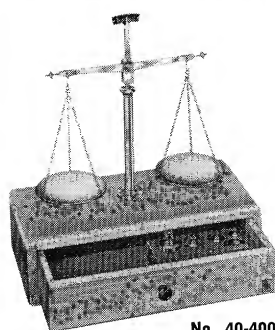
No.	Depth	Each
40-389	2½"	\$2.20



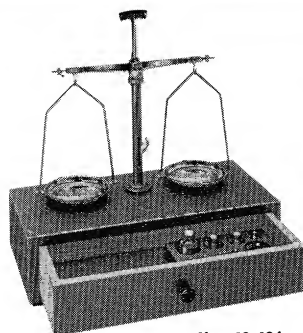
K&D CIRCULAR BENCH SAW

For ring sizing, bracelet tube cutting, and other light cutting jobs. Complete with tube support on lever for feeding tubes into circular saw. Solid aluminum body can be screwed to top of bench. Base measures 2" x 2½" wide; overall height of tool approximately 2½".

No.	Description	Each
40-135	Complete with Saw	\$6.95



No. 40-400

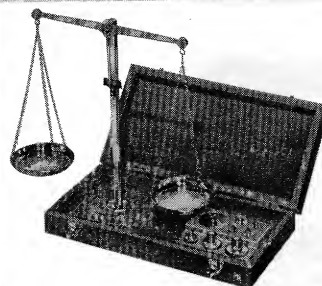


No. 40-401

PLATFORM GOLD SCALES

Sensitive scales for weighing gold. Pans rest on the cabinet top while gold and/or weights are being added, and then are raised by pushing down on a lever... this minimizes swinging. No. 40-401 has rod suspension and removable pans which does away with the problem of swinging and tangled chains. The ends of the scale arms on both models have adjusting screws. Pans are approximately 3 1/4" in diameter. The scales are mounted on a fine wood cabinet measuring approximately 11 1/2" x 5 1/2" x 3 1/4" which has a drawer with a fitted section to hold the weights supplied with the scale.

No.	Capacity	Each
40-400	8 oz.	\$26.95
40-401	8 oz.	29.25



PORTABLE GOLD SCALES

Sensitive scales for weighing gold. Upright arm support screws into base of the case. Come complete with weights in a flat hardwood case measuring 9 1/4" x 4 1/2" x 1 7/8".

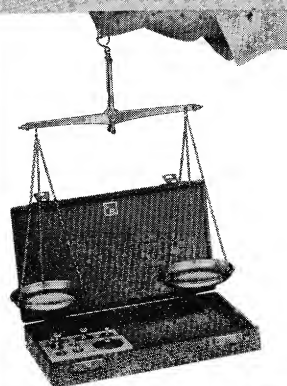
No.	Capacity	Each
40-452	4 oz.	\$18.00



HAMILTON GOLD SCALE

The fulcrum action of this fine, precision scale eliminates the use of weights and springs. A leveling screw is provided for uneven working surfaces. Calibrated in penny-weights to 35 dwt. Made of a sturdy steel, it has a pan diameter of 2 1/2", height 5 3/8". Can be used as a postal scale (20 dwt = 1 oz.).

No.	Capacity	Each
40-445	35 dwt	\$4.80



POCKET HAND GOLD SCALES

Come complete with weights in a leatherette case measuring 8 1/2" x 4 3/4" x 1 1/2". Arms are equipped with adjusting screws; pans measure 3" in diameter.

No.	Capacity	Each
40-450	4 oz.	\$14.40



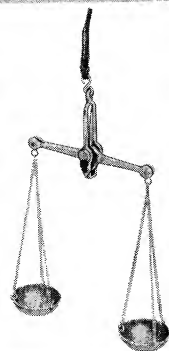
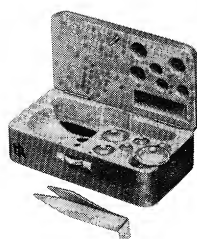
POCKET DIAMOND SCALES

A very sensitive scale for weighing diamonds and precious stones. Fits into a polished hardwood case measuring 7" x 2 1/2" x 1 1/2". Comes complete with tweezers and metric weights from 1/100 to 50 carats.

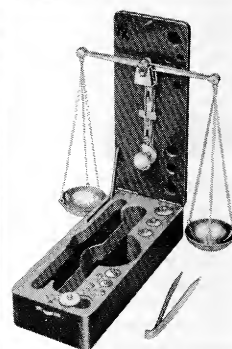
No.	Capacity	Each
40-455	50 carats	\$42.00

MIDGET DIAMOND SCALES

Hand held precision scales that fit into a polished hardwood case measuring 2 3/4" x 1 1/2" x 1". Come complete with tweezers and metric weights from 1/100 to 10 carats.



No.	Capacity	Each
40-459	10 carats	\$36.00



POCKET GOLD SCALES

Sensitive scales for weighing gold. Fits into a polished hardwood case measuring 7" x 2 1/2" x 1 1/2". Comes complete with weights.

No.	Capacity	Each
40-457	2 oz.	\$45.00

DIAMOND WEIGHTS

Set No. 40-508 comes in a wood box, others in cardboard box.

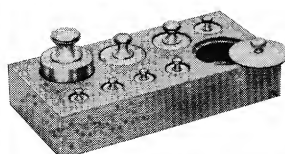


No.	Separate Sizes in Carats*	—
40-500	.01, .02, .05, .10, .25, .50, 1, 2, 5 & 10	—

*Specify Order No. and Carat Size when ordering.

SETS

No.	Capacity	Set
40-501	1/100 to 1 Carat	\$1.00
40-502	1/100 to 2 Carat	1.25
40-505	1/100 to 5 Carat	2.25
40-508	1/100 to 50 Carat	16.00



SEPARATE SIZES

No.	Description	—
WEIGHTS		
40-510	1, 2, 5 & 10 dwt 1, 2 & 4 oz.	—
GRAINS		
40-520	1/2, 1, 2, 3, 4, 6 & 12	—

*Specify Order No. and Size when ordering.

TROY WEIGHTS AND GRAINS

Sold in sets or separate sizes. One dwt. and larger are made of brass and have knobs. Weights below 1 dwt. are made of aluminum.

SETS

Nos. 532/534/538 are mounted on wood blocks.

No.	Description	Set
40-511	All dwts and grains	\$2.50
40-522	Grains only	1.50
40-532	Weights, Cap. 2 oz.	4.00
40-534	Weights, Cap. 4 oz.	5.00
40-538	Weights, Cap. 8 oz.	6.75

SCRAPERS

For cleaning, smoothing and deburring metals. Used to prepare surfaces for soldering, removing excess solder, opening bezels, etc.



SOLID SCRAPER

Has triangular blade with straight sides mounted in hardwood handle.

No.	Blade Length	Each
41-003	3"	\$1.20



HOLLOWED OUT SCRAPER

Has triangular blade with hollowed-out sides, straight edges in hardwood handle.

No.	Blade Length	Each
41-010	2½"	\$1.20



HOLLOWED OUT SCRAPER

Has curved edge triangular blade with hollowed-out sides in hardwood handle.

No.	Blade Length	Each
41-015	2½"	\$1.20

K&D SCREWDRIVERS

Have hard (not brittle) blades made of the best quality tool steel correctly hardened in electric furnaces. Handles are brass with satin chrome finish and individually proportioned for comfortable use. Heads are made of anodized aluminum, swivel easily when in use, and are color coded for instant identification as to size. Sets are available in boxes or ball bearing stands.



SCREW CHUCK SCREWDRIVERS

Double-end blades are locked firmly in place by a screw chuck. Non-rolling heads are mounted on serrated (non-slip) handles. Approx. length 3½".

No.	Blade Size	Each
41-293/1	.100"	\$0.90
41-293/2	.080"	
41-293/3	.070"	
41-293/4	.055"	
41-293/5	.040"	
41-293/6	.025"	
SET IN BOX		
No.	Sizes	Set
41-293	1 thru 6	\$4.95

SET IN BALL BEARING STAND

Extra blades in color coded plastic tubes are furnished with each stand.

No.	Sizes	Set
41-473	1 thru 6	\$16.45

Replacement blades are available



SOLID CHUCK SCREWDRIVERS

Economical yet durable. Have double-end blades, non-rolling swivel heads and serrated (non-slip) handles. Approx. length 3½".

No.	Blade Size	Each
41-250/1	.100"	\$0.60
41-250/2	.080"	
41-250/3	.070"	
41-250/4	.055"	
41-250/5	.040"	
41-250/6	.025"	
SET IN BOX		
No.	Sizes	Set
41-250	1 thru 6	\$3.30

SET IN BALL BEARING STAND

Extra blades in color coded plastic tubes are furnished with each stand.

No.	Sizes	Set
41-475	1 thru 6	\$14.95

Replacement blades are available



FRICION CHUCK SCREWDRIVERS

Have double-end blades held in place by friction chucks. Non-rolling swivel heads are mounted on serrated (non-slip) handles. Lengths from 3" to 3½".

GROUP I

No.	Blade Size	Each
41-279/1	.092"	\$0.80
41-279/2	.070"	.80
41-279/3	.055"	.80
41-279/4	.041"	.80
41-279/5	.035"	.60
41-279/6	.030"	.60
41-279/7	.027"	.60
41-279/8	.020"	.60
41-279/9	.016"	.60
SETS IN BOXES		
No.	Sizes	Set
41-279	1 thru 9	\$6.00
41-289	1 thru 6	4.40

SET IN BALL BEARING STAND

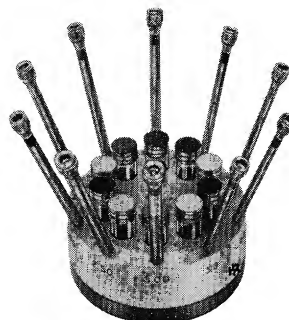
Extra blades in color coded plastic tubes are furnished with each stand.

No.	Sizes	Set
41-479	1 thru 9	\$19.95

GROUP II

No.	Blade Size	Each
41-249/1	.039"	\$0.60
41-249/2	.033"	
41-249/3	.027"	
41-249/4	.020"	
41-249/5	.016"	
SETS IN BOXES		
No.	Sizes	Set
41-249	1 thru 3	\$1.65
41-249B	1 thru 5	2.75
41-249J	3 thru 5	1.65

Replacement blades are available



NEW STYLE

Top quality materials, perfectly proportioned for better balance and more comfortable grip, with non-slip blades locked in place by set screws. They have non-rolling heads, color identification bands, and the mm size stamped on the handles. Lengths 3¼" to 3¾".

No.	Blade Size	Each
41-310/1	.020"	\$0.75
41-310/2	.024"	
41-310/3	.031"	
41-310/4	.039"	
41-310/5	.047"	
41-310/6	.055"	
41-310/7	.063"	
41-310/8	.079"	
41-310/9	.098"	
41-310/10	.118"	

SETS IN BOXES

Sets are furnished with extra blades. Nos. 41-310 and 306 come in polished hardwood cases.

No.	Sizes	Set
41-310	1 thru 10	\$15.95
41-306	1 thru 6	8.85
41-307	1 thru 6	6.25
41-303	1 thru 3	2.95

SET IN BALL BEARING STAND

Extra blades in color coded plastic tubes are furnished with each stand.

No.	Sizes	Set
41-301	1 thru 10	\$26.70

Replacement blades are available

BALL BEARING STANDS

Screwdrivers fit in holes on the outside rim of the swivel top making them instantly available. Aluminum top turns on ball bearings, and is mounted on a heavy steel base that is covered to prevent slipping and marring. Stands listed below are without screwdrivers.

No.	For Sets Nos.	Each
41-472	41-293	\$10.00
41-474	41-250	10.00
41-478	41-279	11.50
41-302	41-310	13.50

SCREWDRIVERS



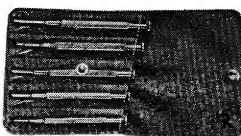
SWISS PATTERN SCREWDRIVERS

Economical non-rolling screwdrivers with swivel heads, non-slip metal handles and steel blades.

No.	Blade Size		Approx. Length	Each
	mm	inches		
41-025/1	2.20	.087	3 3/4"	\$0.25
41-025/2	2.00	.079	3 5/8"	
41-025/3	1.80	.071	3 1/2"	
41-025/4	1.50	.059	3 1/4"	
41-025/5	1.20	.047	3"	
41-025/6	1.00	.039	2 7/8"	
41-025/7	.80	.031	2 3/4"	
41-025/8	.70	.028	2 3/4"	
41-025/9	.60	.024	2 3/4"	
41-025/10	.50	.020	2 5/8"	

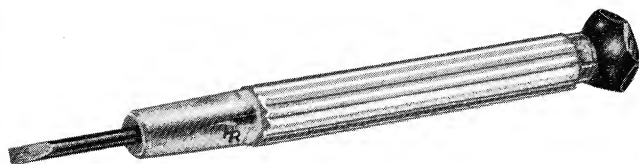
SETS IN PLASTIC POUCHES

No.	Sizes	Price
41-075K	3-4-5-6-7	\$1.55
41-075BK	6-7-8-9-10	1.55



SET IN PLASTIC BOX

No.	Sizes	Price
41-077	3-4-5-6-7-8-9	\$1.95



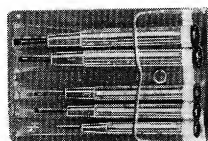
PLASTIC HANDLE SCREWDRIVERS

Lightweight precision screwdrivers with insulated plastic handles and swivel heads. The sturdy steel blades are firmly mounted in serrated non-slip handles that have non-rolling hexagonal heads.

No.	Blade Sizes		Approx. Length	Each
	(millimeters)	(inches)		
41-030/1	3.00mm	.118"	4 1/4"	\$0.90
41-030/2	2.50mm	.098"	4 1/4"	
41-030/3	2.00mm	.079"	3 3/4"	
41-030/4	1.50mm	.059"	3 3/4"	
41-030/5	1.00mm	.039"	3 1/4"	

SET IN PLASTIC POUCH

No.	Sizes	Set
41-030	1-2-3-4-5	\$4.40



JEWELER'S SCREWDRIVERS

Sturdy, well constructed, precision screwdrivers with replaceable blades. Blades are made of the best quality steel and are held in place by screw chucks that are coded to identify the various sizes. Each screwdriver is approximately 3 1/2" long, has a knurled non-slip handle, and a non-rolling swivel head for fast screw setting or removal. Style No. 41-070M have permanent Alnico V magnets inserted in the handles for removing and inserting screws in difficult spots.

REGULAR SCREWDRIVERS

Federal Stock No. 5120-288-8739

MAGNET SCREWDRIVERS

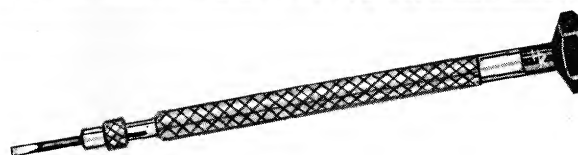
with Alnico V magnets

No.	Blade Size	Each
41-068 1/2/1	.100"	\$0.70
41-068 1/2/2	.080"	
41-068 1/2/3	.070"	
41-068 1/2/4	.055"	
41-068 1/2/5	.040"	
41-068 1/2/6	.025"	

No.	Blade Size	Each
41-070M/1	.100"	\$1.10
41-070M/2	.080"	
41-070M/3	.070"	
41-070M/4	.055"	
41-070M/5	.040"	
41-070M/6	.025"	

SETS IN CARDBOARD BOXES

No.	Description	Sizes	Set
41-068 1/2	Regular	1-2-3-4-5-6	\$4.20
41-070M	Magnet	1-2-3-4-5-6	5.95



NON-MAGNETIC SCREWDRIVERS

For use on small and miniature screws. Will not short circuit delicate electrical components nor will replacement parts stick to the blades. Blades are double ended, made of Beryllium, and are held in place by friction chucks. Handles are plated brass that is serrated to prevent slipping, and have non-rolling aluminum heads that are color coded for quick identification of size. Length approximately 3 1/4".

No.	Blade Sizes	Price
41-264/1	.020"	\$0.80
41-264/2	.030"	
41-264/3	.040"	
41-264/4	.051"	
41-264/5	.063"	
41-264/6	.073"	
41-264/7	.080"	
41-264/8	.098"	

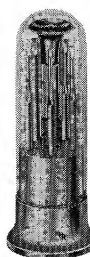
SETS IN BOXES

No.	Blade Sizes	Price
41-264	1 thru 4	\$2.75
41-266	5 thru 8	3.00
41-268	1 thru 8	5.75

Replacement blades are available.

SCREWDRIVER AND WRENCH SETS

With a single handle, in each set, that has a screw chuck to hold five different sizes of screwdriver blades or wrenches. Handle is knurled to prevent slipping and has a swivel top.



SCREWDRIVER AND AWL SET

Set of 4 screwdriver blades with awl and handle. Sizes: .055" — .070" — .080" and .100".

No.	Price
41-155	\$1.50



SCREWDRIVER AND WRENCH COMBINATION SET

Set of 5 (2 blades and 3 wrenches) with handle. Sizes: Phillips Head Nos. 0 and 1, Allen Wrenches Nos. 4, 6 & 8.

No.	Price
41-157	\$2.50



SOCKET WRENCH SET

Set of 5 socket wrenches for hex nuts with handle. Sizes: 3/4" — 3/32" — 1/4" — 1/8" and 5/32".

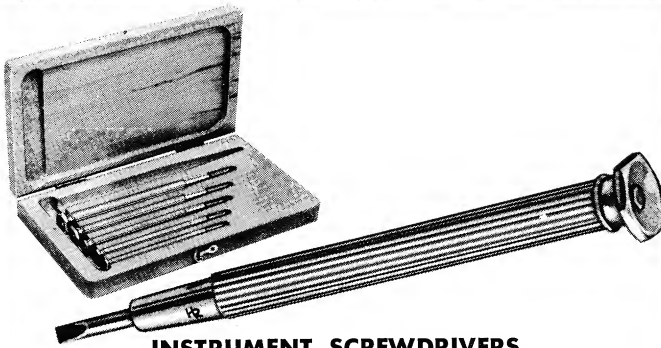
No.	Price
49-558	\$3.50



OPEN END WRENCH SET

Set of 5 open end wrenches with offset heads, and handle. Sizes: 5/4" — 3/32" — 1/4" — 1/8" and 5/32".

No.	Price
49-559	\$2.50



INSTRUMENT SCREWDRIVERS

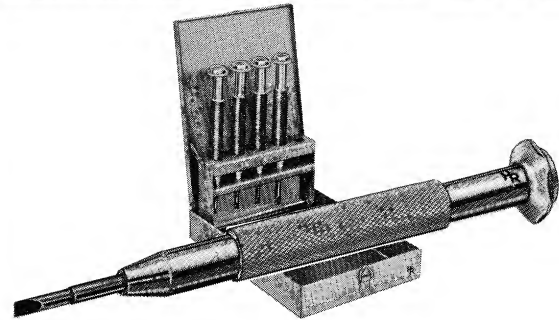
For small and miniature screws. Extremely lightweight because they are made of aluminum. Handles are serrated to prevent slipping and have concave, non-rolling swivel heads. Blades are made of the best silver steel and held in place by friction chucks.

No.	Blade Sizes		Approx. Length	Each
	(millimeters)	(inches)		
41-152/1	3.60mm	.145"	5"	\$0.75
41-152/2	2.90mm	.116"	4 3/4"	
41-152/3	2.30mm	.091"	4 1/4"	
41-152/4	1.80mm	.071"	3 7/8"	
41-152/5	1.50mm	.059"	3 1/2"	
41-152/6	1.00mm	.039"	3 1/4"	

SET IN HARDWOOD CASE

No.	Sizes	Set
41-152	1-2-3-4-5-6	\$4.50

Replacement blades are available.



INSTRUMENT SCREWDRIVERS

For use on small and large screws found in instruments, clocks, meters, timing devices, etc. Extremely lightweight because they are made of aluminum. The sturdy steel blades are mounted in knurled, non-slip handles. Non-rolling swivel head fits comfortably in the palm of the hand and permits maximum pressure to be applied to the screw head.

No.	Blade Sizes		Approx. Length	Each
	(millimeters)	(inches)		
41-407/1	6.00mm	.236"	5 1/8"	\$1.80
41-407/2	5.00mm	.197"	5 1/4"	
41-407/3	4.00mm	.157"	5 1/4"	
41-407/4	3.50mm	.138"	5 1/2"	
41-407/5	3.00mm	.118"	5 1/2"	

SET IN METAL CASE

No.	Sizes	Set
41-407	1-2-3-4-5	\$8.95



INSTRUMENT SCREWDRIVERS

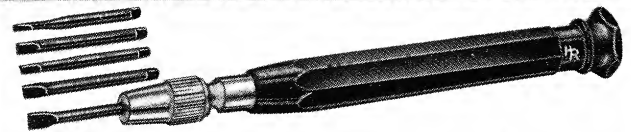
For use on small screws such as those found in instruments, clocks, meters, timing devices, etc. Approximate length 4 1/2", with a 3/8" diameter heavyweight knurled, non-slip handle. Swivel head fits comfortable in the palm and permits maximum pressure to be applied to the screw head. All blades are made of steel or beryllium and except for the Phillips Head No. 1 are double ended. No. 41-410X has a screw chuck attachment for quick, easy removal and replacement of blades. No. 41-412 has a permanent magnet in handle.

No.	Metal	Blade Sizes	Price
41-410	Steel	.115"	\$1.40
41-410A	Steel	.0937"	1.40
41-410N	Beryllium (non-mag.)	.115"	1.50
41-410P	Steel	PH #1	1.50
41-412	Steel	.062" & .094"	3.25

COMBINATION 4-in-1 SET

No.	Metal	Blade Sizes	Price
41-410X	Steel	.067"-.115" & PH #1	\$2.75
	Beryllium (non-mag.)	.115"	

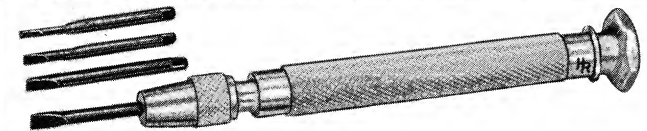
Replacement blades available, please specify size and type.



PLASTIC HANDLE INSTRUMENT SCREWDRIVER

Combination 5-in-1 set, hollow compartment in the plastic handle holds the extra blades and can be reached by pulling off the swivel top. The sturdy steel blades are held in place by a screw chuck. Plastic handle makes the screwdriver light-in-weight and acts as an insulator, it is hexagonal in shape to provide a firm grip. The swivel head is non-rolling.

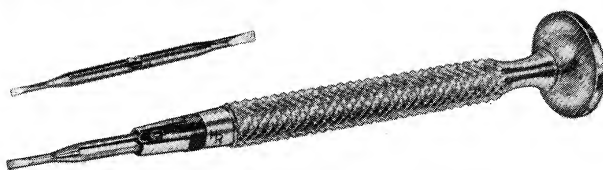
No.	Blade Sizes in mm's and inches	O.L.	Set
41-405	1.50mm-2.00mm-2.50mm-3.00mm-3.50mm or .059"-.079"-.098"-.118"-.138"	5 1/2"	\$1.35



ALUMINUM HANDLE INSTRUMENT SCREWDRIVER

Combination 4-in-1 set. Hollow compartment in the handle holds the extra blades and can be reached by pulling off the swivel top. Sturdy steel blades are held in place by a screw chuck. The lightweight aluminum handle is knurled to prevent slipping and has a non-rolling swivel head.

No.	Blade Sizes in mm's and inches	O.L.	Set
41-406	1.50mm-2.00mm-2.50mm-3.00mm or .059"-.079"-.098"-.118"	4 3/4"	\$1.10



INSTRUMENT SCREWDRIVER

Fitted with double-end blade which is held in handle with spring clip. Heavy knurled handles with swivel top.

No.	Blade Sizes	Approx. Length	Price
41-416	.060" & .085"	4 1/2"	\$1.25

Replacement blades available

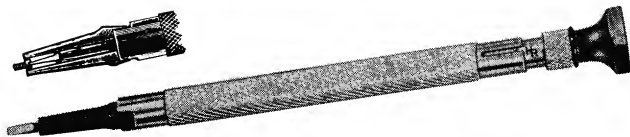


K&D INSTRUMENT SCREWDRIVERS

No. 41-234 has a spring action, retractable pin to guide the blade into difficult or awkward spots. No. 41-235 has blades of different lengths (1 1/8" and 3") for normal work. Blades are double ended and held in place by screw chucks. Handle is knurled to prevent slipping and wooden swivel head fits in palm.

No.	Blade Sizes	O.L.	Price
41-234	.125"	4 1/2"	\$2.50 ea.
41-235	.125"	5 1/8" and 6 1/4"	2.25 set

SCREWDRIVERS



SCREW HOLDING SCREWDRIVER

Has self adjusting jaws and will hold the screw straight and securely while removing or replacing; screws will not get lost or threads stripped. Knurled gun metal handle, non-rolling hexagonal head.

No.	Blade Size	Approx. Length	Each
41-423	.075"	4 1/2"	\$3.80

Replacement blades available.



SCREW HOLDING SCREWDRIVERS

For starting screws, for driving them in, and for removing. Plunger action of the handle turns a wedge at the blades tip that automatically grips the screw head. Made of brass with screw chucks to hold the steel blades in place. Handle has been serrated to prevent slipping and has a non-rolling swivel top.

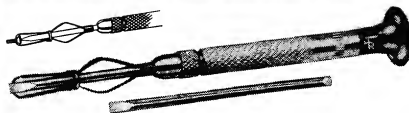
No.	Blade Size	O.L.	Each
41-462	2.50mm	4"	\$4.50
41-464	3.50mm	4"	4.75
41-466	4.50mm	4 3/8"	5.25

K&D SCREW HOLDING SCREWDRIVER

For small precision screws such as those used on balance wheels. Has screwdriver blade in center of three pronged jaws which are opened and closed by pressing on swivel head. Chrome plated, knurled handle.



No.	Blade Size	Each
41-427	.027"	\$2.50
41-427A	.055"	2.75



SCREW HOLDING SCREWDRIVER

A specially made steel clip holds screw head firmly during insertion. Comes with two blades 1 3/4" and 2 1/2" in length that are held in place by a screw chuck. Handle is approximately 2 5/8" long, is serrated for non-slip gripping, and has a concave swivel head.

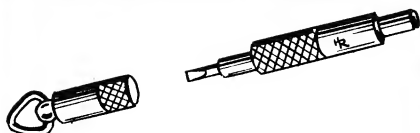
No.	Blade Size	Price
41-456	.100"	\$1.50



FLEXIBLE SCREW HOLDER

Four-pronged jaws hold and start screws in difficult and awkward spots. Can be opened or closed by pressing and releasing plunger type head. Made of flexible coiled steel wire.

No.	O.L.	Price
41-455	9"	\$1.50



POCKET SCREWDRIVER

Protective cap has bow so that it can be carried on a key chain. Handle is knurled for non-slip turning. Approx. length 2".

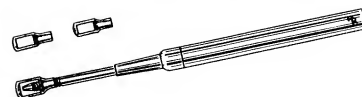
No.	Blade Size	Each
41-419	.070"	\$0.70

K&D SCREWDRIVER BLADE SHARPENER



Watchmaker's screwdriver blades can be sharpened easily by inserting screwdriver in tool and rolling back and forth over sharpening stone. Screwdriver is held firmly by spring and angle can be changed by varying point where screwdriver is held.

No.	Width	Each
41-579	1 7/8"	\$3.60



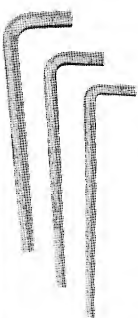
SCREW END FINISHER

Holds small screws so that end projects through hole in lantern. Screw can then be shortened and finished. Comes with 2 lanterns.

No.	Length	Set
41-580	4"	\$2.50

HEX KEYS

For all sizes covered by A.S.A.-B-18-1954 and new 1961 standards... dimensions are across flats. Keys are made from a selected steel that has been heat treated and tempered for "Wearhard" surfaces and precision uniformity.



SEPARATE SIZES

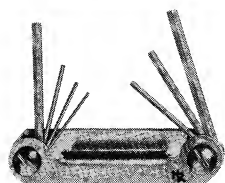
No.	Size	Screw Nos.		Pressure Plugs	Each	Pkg. 10
		Set	Cap			
41-550	.028"	#0	—	—	\$0.10	\$0.25
	.035"	#1, #2	—	—	.10	.25
	.050"	#3, #4	#0, #1	—	.10	.25
	1/16"	#5, #6	#2	—	.10	.25
	3/64"	#8	#3, #4	—	.10	.40
	3/32"	#10	#5, #6	—	.10	.40
	7/64"	—	#6	—	.10	.40
	1/8"	1/4	#8	—	.10	.45

No.	Size	Screw Nos.		Pressure Plugs	Each	Pkg. 10
		Set	Cap			
41-550	3/4"	—	#8	—	\$0.10	\$0.45
	5/32"	3/8	#10	1/16	.15	.60
	3/16"	3/8	1/4	1/2	.15	.60
	1/8"	1/2	3/8	—	.15	.75
	1/4"	1/2	—	1/4	.15	.90
	3/8"	5/8	3/8 & 1/2	3/8	.20	1.55
	3/8"	3/4	1/2	1/2	.25	2.15

Specify Order No. and Size when ordering.

SET IN PLASTIC POUCH
Contains all 15 sizes listed in the table alongside. Made of durable plastic, the pouch has compartments for each key and a special die cut top to keep keys in place.

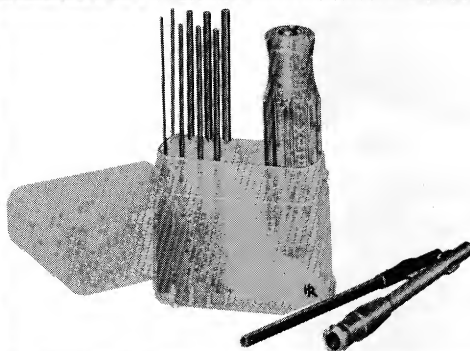
No.	Description	Set
41-565	15 Sizes	\$1.00



HEX KEY POCKET SET

Has seven keys that fit Set Screws from #3 to 3/8". Exclusive patented I-beam construction prevents bending, and design permits 180° swivel without removing wrench from screw.

No.	Sizes	Each
41-567	.050", 1/16", 3/64", 3/32", 1/8", 3/16", 1/4"	\$0.85

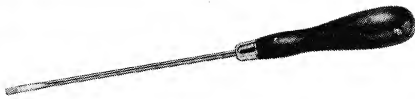


XCELITE HEX DRIVER SET

Set contains 9 four inch hex drivers, a 4" extension blade, and an amber (UL) plastic handle. All hex head sockets are precision-formed, cold drawn case hardened steel. Handle has patented spring device that holds blade firmly yet permits quick, easy insertion and removal.

No.	Sizes	Set
41-571	.050", 1/16", 3/64", 3/32", 1/8", 3/16", 1/4", 5/16", 3/8"	\$8.95

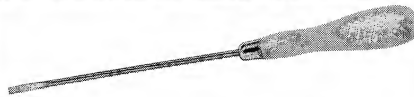
SCREWDRIVERS AND NUTDRIVERS



WOOD HANDLE SCREWDRIVERS

Slim, light screwdrivers with hardwood handles. Blade size approx. 1/8".

No.	O.L.	Blade Length	Each
41-333	6 3/4"	3"	\$0.95
41-334	7 3/4"	4"	1.05
41-335	8 3/4"	5"	1.05
41-336	9 3/4"	6"	1.05



K&D WOOD HANDLE SCREWDRIVERS

Slim, light screwdrivers with hardwood handles. Blade size approx. 1/8".

No.	O.L.	Blade Length	Each
41-341	5 3/8"	1 1/2"	\$0.90
41-342	5 7/8"	2"	.90
41-343	6 7/8"	3"	.90
41-344	7 7/8"	4"	.90
41-345	8 7/8"	5"	.90



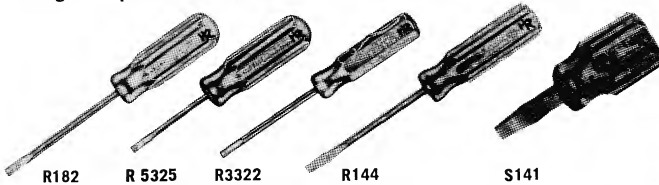
PLASTIC HANDLE SCREWDRIVERS

Slim, light screwdrivers with plastic handles. Blade size approx. 5/32" with the exception of No. 41-363 which is 1/8".

No.	O.L.	Blade Length	Each
41-363	6 1/4"	3"	\$0.60
41-364	7 1/4"	4"	.60
41-365	8 1/4"	5"	.60
41-366	9 1/4"	6"	.60

XCELITE SCREWDRIVERS

Forged from tough SAE 6150 Chrome Vanadium Electric Furnace Steel, with shockproof, breakproof, amber plastic (UL) handles. Slot type tips are ground lengthwise to the blade and accurately gauged to fit screw slots snugly. Precision grinding and squaring assure greater "end" strength... prevent screwdriver from "riding" out and damaging the slot.



Order No.	Stock No.	Description	Blade		Each
			Dia.	Length	
41-370	R3322	w/Pocket Clip, Round	3/32"	2"	\$0.45
	R181	Round	1/8"	2"	.45
	BR181	Beryllium	1/8"	2"	.50
	R182	Regular, Round	1/8"	2"	.55
	R184			4"	.70
	R186			6"	.75
	R188			8"	.90
	R1810			10"	1.05
	R5325	Regular, Round	3/32"	5"	.75
	R5328			8"	1.00
	R3163	Regular, Round	3/16"	3"	1.00
	R3164			4"	1.10
	S141	Stubby, Square Blade	1/4"	1 1/4"	.85
	R144	Regular, Round	1/4"	4"	1.40
	R146			6"	1.50
	R148			8"	1.60
	R5166	Regular, Round	5/16"	6"	1.85

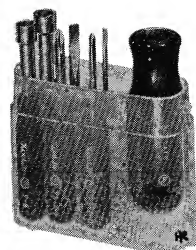
Specify Order No. and Stock No. when ordering.



PHILLIPS HEAD

Order No.	Stock No.	Phillips No.	Description	Blade		Each
				Dia.	Length	
41-375	P12S	0	w/Pocket Clip	1/8"	2"	\$0.65
	X100		Regular	1/8"	2"	.80
	SX101	1	Stubby	3/16"	1 1/4"	1.10
	X101		Regular	3/16"	3"	1.20
	X108	2	Regular	1/4"	6"	1.35
	X102				4"	1.50

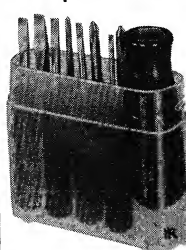
Specify Order No. and Stock No. when ordering.



NUTDRIVER AND SCREWDRIVER SET

Contains two Nutdrivers, sizes: 1/4" and 3/8"; two slot tip Screwdrivers, sizes: 3/32" and 1/8"; two Phillips Screwdrivers, sizes: #0 and #1; and hollow handle, 1" x 3 3/8".

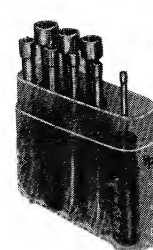
No.	Set
41-522	\$4.60



SCREWDRIVER SET

Contains five slot tip Screwdrivers, sizes: 3/32", 1/8", 5/32", 3/16" and 1/4"; three Phillips Screwdrivers, sizes: #0, #1 and #2; and a hollow handle, size 1" x 3 3/8".

No.	Set
41-521	\$5.25



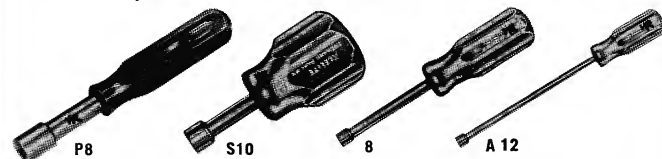
NUTDRIVER SET

Contains ten color coded Nutdrivers, sizes: 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", and 1/2"; and a hollow handle, size 1" x 3 3/8".

No.	Set
41-520	\$6.95

XCELITE NUTDRIVERS

With precision, cold drawn, case-hardened sockets and high carbon steel shafts that are polished and plated. Handles are shockproof, breakproof, color-coded, plastic (UL), with large readable size markings.



Order No.	Stock No.	Description	Hex Opening	Blade Length	Each
41-501	P4	Solid Shaft, w/Pocket Clip	1/8"	1 1/4"	\$0.80
	6	Solid Shaft	3/16"	3"	1.25
	HS6	Hollow Shaft	3/16"	3 1/8"	1.55
	7	Solid Shaft	7/32"	3"	1.25
	8	Solid Shaft	7/32"	3"	1.25
	S8	Solid Shaft, Stubby	1/4"	1 1/8"	1.05
	A8	Solid Shaft, Extra Long		6"	1.60
	HS8	Hollow Shaft	1/4"	3 1/8"	1.55
	9	Solid Shaft		3"	1.25
	10	Solid Shaft	3/8"	3"	1.25
	S10	Solid Shaft, Stubby		1 1/8"	1.05
	A10	Solid Shaft, Extra Long	3/8"	6"	1.60
	HS10	Hollow Shaft		3 1/8"	1.55
	11	Solid Shaft	1 1/8"	3"	1.25
	12	Solid Shaft	1 1/8"	3"	1.25
	S12	Solid Shaft, Stubby	3/8"	1 1/8"	1.05
	A12	Solid Shaft, Extra Long		6"	1.60
	HS12	Hollow Shaft	3/8"	3 1/8"	1.55
	HS14	Hollow Shaft	7/16"	3 1/8"	1.75
	HS16	Hollow Shaft	1/2"	3 1/8"	1.80
	HS18	Hollow Shaft	5/8"	3 1/8"	1.90
	HS20	Hollow Shaft	5/8"	3 1/8"	2.10

Specify Order No. and Stock No. when ordering.



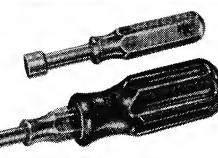
SETS ON STANDS

Available in heavy gauge steel bench stands and wall racks, with indexes.

No.	Shaft	Style	Stock Nos.	Set
41-515	Solid	Bench	6, 7, 8, 9, 10, 11 and 12	\$8.60
41-516	Solid	Wall	6, 7, 8, 9, 10, 11 and 12	8.80
41-517	Hollow	Bench	HS8, HS9, HS10, HS11, HS12, HS14 and HS16	11.60

COMPACT TOOL SETS

Small tools, only 3 1/2" long, for precision work, with a special piggyback "torque amplifier" handle that slips over the pocket tools plastic (UL) handle to give the grip, reach and power of a standard size handle. The slim see-thru plastic case fits pocket, has flat base for use as bench stand.



SCREW TOOLS



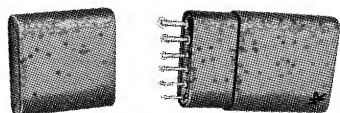
BALANCE SCREW HOLDERS

Two pronged jaws hold miniature screw heads and other small parts firmly. Can be operated with one hand... chuck slides forward to lock jaws around object. Length 4".

No.	Sizes	Each
41-451/1	0.20mm	\$1.60
41-451/2	0.25mm	
41-451/3	0.30mm	
41-451/4	0.40mm	
41-451/5	0.45mm	
41-451/6	0.50mm	
41-451/7	0.65mm	
41-451/8	0.75mm	

SET IN PLASTIC BOX

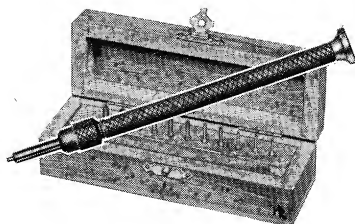
No.	Sizes	Set
41-450	1, 4 and 7	\$4.80



WHEEL COUNTERSINKS AND BURNISHERS

For removing burrs and for burnishing holes after reaming or drilling, and for making oil sinks. Tools are double ended... one end a burnisher, the other a countersink. Sold only in sets of six.

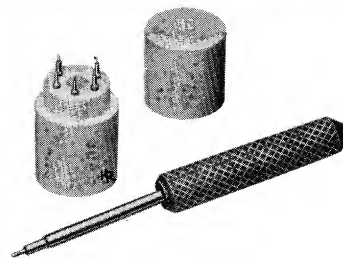
No.	Wheel Diameters	Set
33-455	.090"-.100"-.115" .145"-.180"-.215"	\$4.95



COUNTERBORES

For boring holes so that flat head screws can be set flush with surface. Set of 12 comes in wood box with holder.

No.	Diameters	Set
33-402	1.0 to 3.5mm	\$6.95

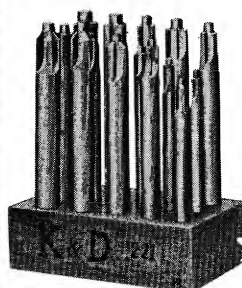


COUNTERBORES

For boring holes so that jewel screws can be set flush with surface. Set of 6 comes in wood stand with holder.

No.	Diameters	Set
33-205	0.8 to 1.5mm	\$4.50

K&D COUNTERBORES AND COUNTERSINKS



X-REFERENCE:
Refer to
Balance
Screw
Undercutters
Page 120

To cut recessing holes for Fillister and Flat Head standard machine screws. Available in fine, quick cutting carbon or high speed steels... to order the high speed add the prefix HS (33-221HS) to the Order No. Packed in a box with wood stand.

No.	Set of	Screw Head Sizes		Carbon Steel	H. Speed Steel
		Fillister	Flat		
33-222	4	0 & 1	0 & 1	\$2.80	—
33-221	12	2-4-6-8-10 12 & 14	2-4-6 8 & 10	11.25	22.50
33-221A	16	2-3-4-5-6-7-8 9-10-12 & 14	2-4-6 8 & 10	14.75	29.50



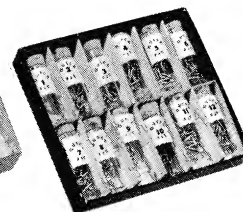
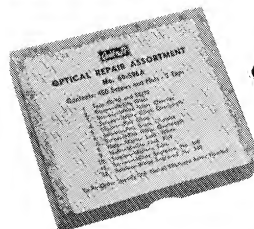
OPTICAL HEXAGONAL WRENCH

For use on Marlite nuts. The metal wrench is mounted in a plastic handle with swivel head.

No.	Length	Each
49-563	4 1/4"	\$1.00

OPTICAL SCREWS AND PADS

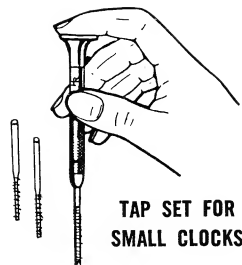
Repair parts for a wide variety of eyeglass styles. Assortment No. 60-595 contains 48 replacement nose pads; assortment No. 60-596A contains 550 pieces (screws and nuts) with two taps; while assortment No. 60-597 has 905 assorted glass, hinge, frame, tube, temple and rimway post screws with 2 taps.



No.	Description	Set
60-595	48 Replacement Nose Pads	\$7.95
60-596A	450 Screws, 100 Nuts and 2 Taps	5.40
60-597	902 Screws and 2 Taps	6.50

SCREW TAP AND DIE SETS

Sets for use on small clocks and similar size instruments; watches and other precision mechanisms; and by jewelry makers and opticians.



TAP SET FOR SMALL CLOCKS

Set of 5 taps, made of a tough, heat-treated steel, for cutting the inside threads on small clocks and similar size instruments. Taps are held in place by a screw chuck, the handle is serrated to prevent slipping, and a torque hole has been drilled through the handle to provide extra leverage.

SIZES

0-80, 1-32, 2-56, 3-48 and 4-40

No.	Description	Set
41-603	Set of 5 Taps and Handle	\$4.95



TAP AND DIE SET

Set consists of 15 dies and 30 taps (in 15 sizes) covering the range from 0.4mm to 1.7mm. Suitable for threading watch screws, stems, and similar precision work. Comes complete in fitted leatherette case with die holder.

No.	Description	Set
41-607	30 Taps and 15 Dies	\$9.95



WATCHMAKING AND JEWELRY MAKING TAP AND DIE SETS

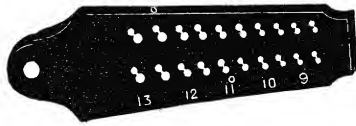
No. 41-611 has the regular metric fine thread used by watchmakers, opticians and fine mechanics. Flange angle is 60°. No. 41-612 has a more coarse and more flat thread, and is used by jewelers, particularly for ear screws. Flange angle is 50°.

No.	Sizes in Millimeters	Set
41-611	0.7 - 0.8 - 1.0 - 1.1 - 1.2 1.3 - 1.4 - 1.6 - 1.8 - 2.0	17.50
41-612	0.8 - 0.9 - 1.0 - 1.1 - 1.2 1.3 - 1.4 - 1.6 - 1.8 - 2.0	\$17.50

SCREWPLATES

The screwplates illustrated below are numbered by a special system which does not correspond with any common measuring system. The following table lists some of the numbers and their corresponding size in millimeters and inches, which in turn will help determine the range of sizes on a particular screwplate.

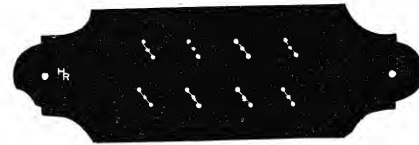
Approx. Size	Numbers on Plate								
	—6	—1	3	4	8	9	10	13	17
millimeter	4.0mm	2.15mm	1.57mm	1.46mm	1.11mm	1.04mm	0.95mm	0.74mm	0.47mm
inches	.158"	.085"	.062"	.058"	.044"	.041"	.037"	.029"	.019"



JEWELERS EAR WIRE SCREWPLATE

Single notched for right hand threads. Comes complete with 5 taps.

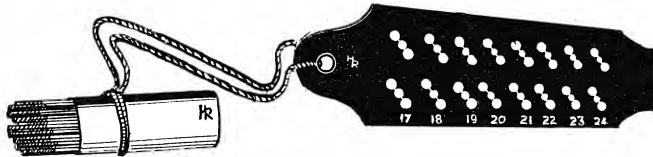
No.	Holes	Sizes	Each
41-616	20	9 to 13	\$9.00



JEWELERS EAR WIRE SCREWPLATE

Double notched for right hand threads. Comes complete with 4 taps.

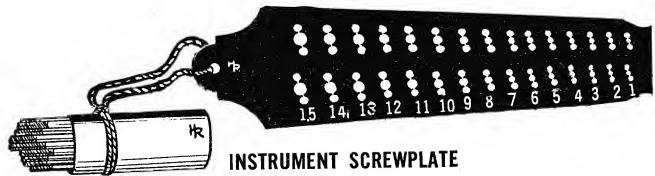
No.	Holes	Sizes	Each
41-618	8	8 and 9	\$7.00



PRECISION INSTRUMENT SCREWPLATE

For use on watches and similar precision mechanisms. Double notched for right hand threads. Comes complete with 8 taps.

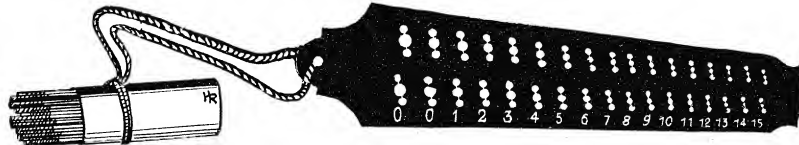
No.	Holes	Sizes	Each
41-619	16	17 to 24	\$7.00



INSTRUMENT SCREWPLATE

For use on clocks and similar size instruments. Double notched for right hand threads. Comes complete with 15 taps.

No.	Holes	Sizes	Each
41-682	30	—15 to 1	\$19.15



MULTI-PURPOSE SCREWPLATES

For use on small precision instruments, clocks and larger mechanisms, and jewelers ear wire. Double notched with models for both right and left hand threads.

RIGHT HAND THREADS ... With Taps

No.	Holes	Sizes	Each
41-620	24	10 to 21	\$9.00
41-623	36	4 to 21	14.20
41-626	48	—1 to 21	19.15
41-629	60	—7 to 21	25.85

RIGHT HAND THREADS ... Without Taps

No.	Holes	Sizes	Each
41-630	24	10 to 21	\$6.70
41-633	36	4 to 21	10.00
41-636	48	—1 to 21	13.35
41-639	60	—6 to 22	19.15

LEFT HAND THREADS ... With Taps

No.	Holes	Sizes	Each
41-652	30	3 to 17	\$14.20
41-655	42	—1 to 18	19.30



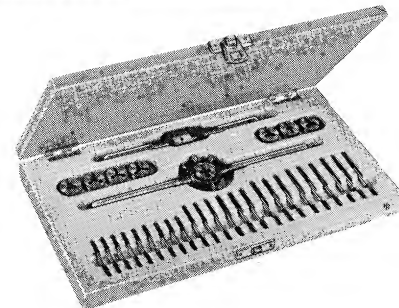
PRECISION METRIC TAP AND DIE SET

For use on small, and miniature precision mechanisms. Replacement taps and dies are available.

Set consists of:

- 18 Dies in the following metric sizes:
0.30mm 0.45mm 0.60mm 0.75mm 0.90mm 1.05mm
0.35mm 0.50mm 0.65mm 0.80mm 0.95mm 1.10mm
0.40mm 0.55mm 0.70mm 0.85mm 1.00mm 1.20mm
- 54 Right Hand Threaded Taps. (*Taps come in sets of 3*)
- 1 Die Holder • 1 Tap Holder with 2 Chucks
- Polished Hardwood Fitted Case

No.	Description	Price
41-608	Complete set as described above	\$48.00
41-608T	Replacement taps, set of 3, Specify Size	.95
41-608D	Replacement die, Specify Size	1.50



INSTRUMENT METRIC TAP AND DIE SET

For clocks, meters and other similar size instruments. Replacement taps and dies are available.

Set consists of:

- 8 Dies in the following metric sizes:
1.00mm 1.40mm 2.00mm 2.60mm
1.20mm 1.70mm 2.30mm 3.00mm
- 24 Right Hand Threaded Taps (*Taps come in sets of 3*)
- 1 Four-Screw Die Holder • 1 Adjustable Tap Holder
- Polished Hardwood Fitted Case

No.	Description	Price
41-609	Complete set as described above	\$54.00
41-609T	Replacement taps, set of 3, Specify Size	2.95
41-609D	Replacement die, Specify Size	2.10

SETTING TOOLS

SETTING BURNISHERS

Oval shaped tool steel burnishers for setting stones and jewels. Metal is highly polished and anchored securely in 3½" seasoned hardwood handles.



STRAIGHT BLADES

No.	Blade	Each
15-001½	1½"	\$1.15
15-002	2"	1.20
15-002½	2½"	1.25
15-003	3"	1.35



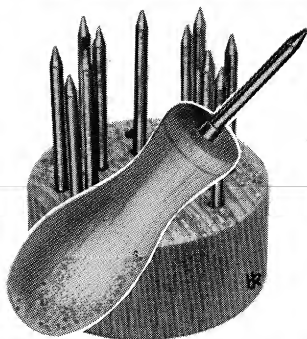
CURVED BLADES

No.	Blade	Each
15-011½	1½"	\$1.15
15-012	2"	1.20
15-012½	2½"	1.25
15-013	3"	1.30



CURVED SLIM BLADE

No.	Blade	Each
15-031	1¾"	\$1.15

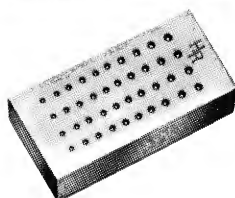


BEADING TOOLS

Used to form beaded edge to hold diamonds, half-pearls and other stones in mountings. Ideal for tightening stones that have become loose. Sets are mounted in wood blocks and come with polished hardwood handle.

No.	Mfg.	Sizes*	Price
41-755	Domestic	00-0-1-2-3-4	\$4.95 set
41-756		5-6-7-8-9 & 10	.40 ea.
41-765	Imported	2-4-6-7-8-9	3.25 set
41-766		10-11-12-13-14 & 16	.30 ea.

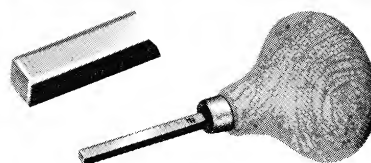
*Specify Order No. and Size when ordering single tool.



BEADING TOOL PLATE

For reshaping ends of standard size beading tools. Made of steel and properly hardened. Has 40 beads in 8 sizes.

No.	Dimensions	Each
41-752	2" x 1½" x ½"	\$12.60



PRONG PUSHER

Made especially to push-in the prongs against the stone in a setting.

No.	Length	Each
41-735	3¼"	\$0.50

MILLGRAIN TOOLS

Used to form a decorative beaded edge on rings and other jewelry. No. 41-712 are first quality tools.

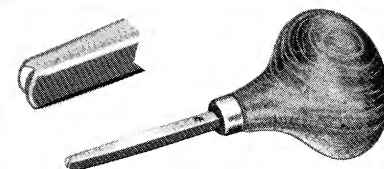
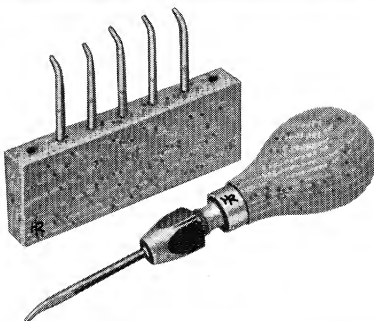
No.	Sizes*	Each
41-710	1,2,3,4,5,6,7,8,9,10 and 12	\$1.50
41-712	2,3,4,5,6,7 and 8	3.50

*Specify Order No. and Size, when ordering.

SET IN WOOD STAND

Contains 6 different popular size wheels from style No. 41-710 with wood handle that has a quick tightening chuck.

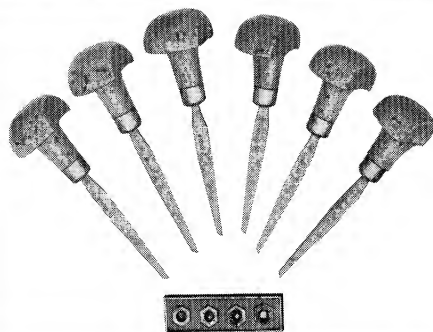
No.	Description	Set
41-711	Set of 6	\$11.95



BEZEL ROLLER

Made especially to roll the bezel around a stone in a setting.

No.	Length	Each
41-736	3½"	\$1.50



DIAMOND SETTING OUTFIT

For setting diamonds in modern mountings. A model plate is included which shows each step required to make the stone mounting. Set consists of six sharpened gravers, ready to use, mounted in hardwood handles. Comes complete with instructions.

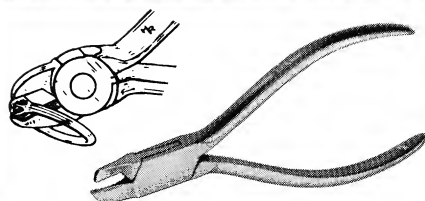
No.	Description	Set
19-429	6 Gravers & Model Plate	\$10.75



PEARL DRILLS

For drilling holes in soft metals that act as settings for seed pearls. Set consists of 12 different sizes mounted in a plastic stand with cover.

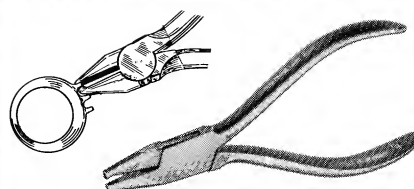
No.	Description	Set
20-383	Set of 12	\$4.25



STONE SETTING PLIERS

For setting and tightening stones. Ends fit over prongs in setting.

No.	Length	Each
37-185	5"	\$4.25



CLAW STRETCHING PLIERS

Used for stretching, repairing and straightening ring claws.

No.	Length	Each
37-195	5½"	\$4.25



SUN BLEACHED BEES WAX

Use to pick up loose stones.

No.	Description	Each
21-322	Disposable Tube	\$0.35

X-REFERENCE: Burs on page 17... Flex-shafts page 40... Handles page 49.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

41-910



SNIPS

For cutting templates or patterns in light metals. Lightweight, easy to handle. Polished blades with enameled handles, length 7". Nos. 41-909S/910S have springs.

No.	O.L.	Blades	Price
41-909	7"	Straight	\$2.40
41-909S	7"	Straight	2.75
41-910	7"	Curved	2.50
41-910S	7"	Curved	2.85

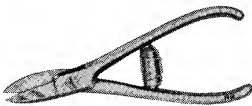
TINNERS SHEARS



For cutting lightweight metals. Have wide loop black handles and polished blades.

No.	Length	Each
41-918	8"	\$2.90

FILAMENT SHEARS



For cutting small filament wire such as the kind used in radio and television tube manufacturing. Polished blades and handles with volute spring.

No.	Length	Each
41-934	5"	\$3.65

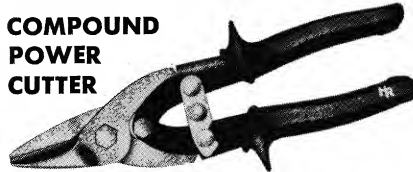
UNIVERSAL SHEARS



For cutting all kinds of light sheet metal. Cuts in-and-out intricate designs with ease. Enameled handles, polished blades.

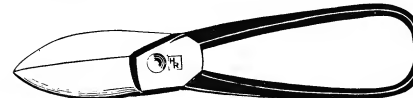
No.	Length	Each
41-930	7"	\$2.25

COMPOUND POWER CUTTER



This compound action cutter makes it easy to shear sheet metal up to 20 gauge. It can also be used on screening, metal lath and un-hardened wire. Polished jaws are made of a special hardened steel. With cushion grip handles.

No.	Length	Each
41-933	9"	\$3.00

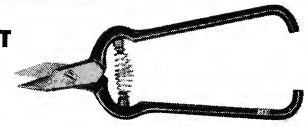


SILVERSMITHS SHEARS

For cutting sheet metals. Have black handles with polished blades.

No.	Length	Each
41-928	8"	\$2.50

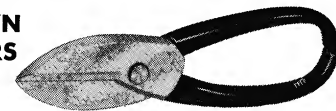
FILAMENT SHEARS



For cutting wire filaments. Has special tapered nose blades for difficult or awkward cutting areas. Polished blades, black handles, and coil wire spring.

No.	Length	Each
41-935	6½"	\$4.15

BROWN SHEARS



Full polished shears with keen cutting edges that retain their sharpness. Left hand type (illustrated above) is type normally used for cutting solder.

No.	Length	Description	Each
41-926	6"	Left Hand	\$2.50
41-927	7"	Left Hand	3.00
41-916	6"	Right Hand	2.75

ELECTRICIANS SHEARS



For cutting, stripping, scraping and filing electrical and telephone conductors. Made of a hot drop forged steel that has been nickel plated. Has 2 stripping notches for 19 and 23 gauge wire, with scraper and file on back edge of blade.

No.	Dimensions		Each
	O.L.	Blade	
41-936	5"	1½"	\$2.90



PEER SCISSORS For flat wire and sheet metal. Made in Solingen of a high quality drop forged steel and given a bright nickel plated finish to prevent oxidation.

SHORT BLADE SCISSORS



For small, soft wire. Very slender, narrow, tapered blades, approximately ¾" long and ⅛" wide, with medium loop handles.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-810	Straight	3½"	¾"x¼"	\$2.50
41-811	Curved	3½"	¾"x¼"	2.50

WIDE BLADE SCISSORS



For small, soft wire. Short wide blades, approximately 1" long and ¼" wide, with medium loop handles.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-815	Straight	3¾"	1"x¼"	\$2.50
41-816	Curved	3¾"	1"x¼"	2.50

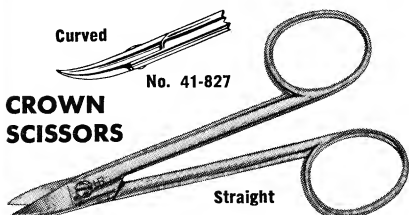
NARROW BLADE SCISSORS



For small, soft wire. With longer tapered blades approximately 1½" long and ¼" wide, and large loop handles.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-820	Straight	4¾"	1½"x¼"	\$2.60

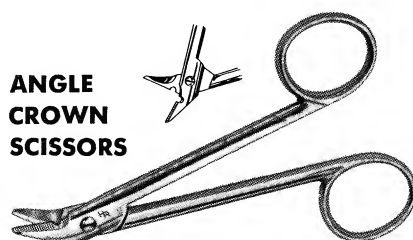
CROWN SCISSORS



For hard wire. Short, stubby blades approximately ⅝" long and ¼" wide, in three different styles including a serrated edge.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-825	Straight	4½"	⅝"x¼"	\$2.30
41-826	Straight (1 edge serrated)	4½"	⅝"x¼"	2.40
41-827	Curved	4½"	⅝"x¼"	2.40

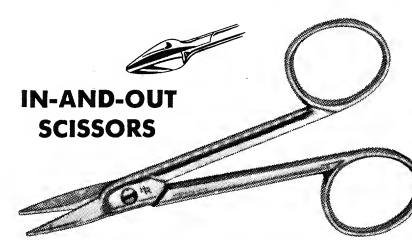
ANGLE CROWN SCISSORS



For precision cutting of wire and light sheet metal where other cutters fail. Has a special cutout for round wire, a serrated jaw, and strong leverage. Will cut from a straight line to any degree of a curved line.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-829	Angled	4¾"	⅝"x¼"	\$4.50

IN-AND-OUT SCISSORS



For hard wire and light sheet metals. Short triangular blades, approximately 1½" in length, for cutting in-and-out patterns and designs. This small scissor has strong leverage and cutting action.

No.	Blades	Dimensions		Price
		O.L.	Blade	
41-830	Straight	4¾"	1½"	\$3.95



SOLDERING MACHINE AND DEMAGNETIZER

You will find it easy to use this compact, efficient machine for soldering rings, jewelry, spectacle frames or anything where hard or soft solder is needed. Heat range for soldering the lightest work, to heavy gold and silver rings. Heat is controlled by a selector knob so that you can dial the correct heat. The heat for soldering is produced electrically, **without flame**, by touching a carbon electrode to the work to be soldered. The current passing through the carbon will heat the object to be soldered in a matter of seconds.

Carbons are copper plated to insure good contact. The large carbon holder can be adjusted to use carbons both horizontally or vertically, and is made low enough so that both hands can rest on the bench.

DEMAGNETIZES, TOO!

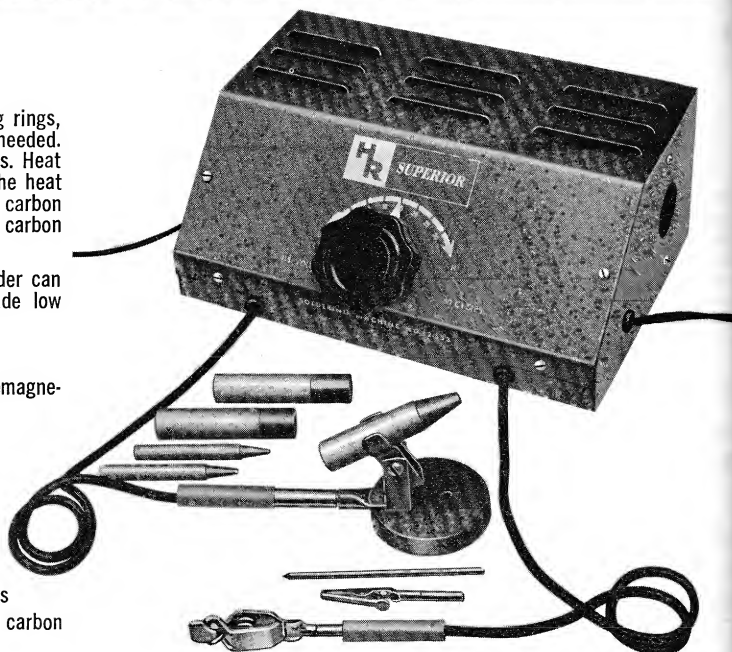
Watch movements, small instruments, or small tools can be quickly demagnetized by following the simple instructions.

SPECIFICATIONS

- Maximum 1000 Watts
- Temperatures to 2000°F
- 115-Volt, 60 Cycle, AC
- Weight 12 lbs.
- Dimensions: 10¼"x6¾"x4½"

SET CONTAINS:

- Foot control switch
- Clamp for small items
- 3 Large carbons
- Clamp for large items
- 2 Small carbons
- Stand for large carbon
- Contact rod
- Complete instructions



SHOCKPROOF!

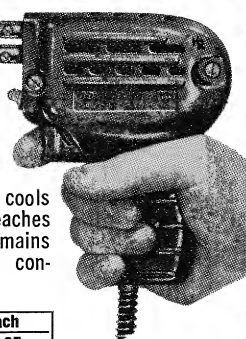
The voltage at the highest heat is very low and the hands may touch any part of the carbon holders or contact clips without sensation of shock.

No.	Description	Set
42-553	Complete with Instructions	\$44.25

ELECTRONIC SOLDERING GUN

- Light • Beautifully Balanced • Ample Heat
- 1.1 Amp. Max. • UL approved

Working hot in 2½ seconds and yet quickly cools when trigger is released. Extra long steel tip reaches inaccessible spots, prevents heat back-up and remains tinned indefinitely under normal use. Plastic construction is both heat and shock resistant.



No.	Description	Each
42-554	120-Volt, 60 Cycle, AC	\$7.95

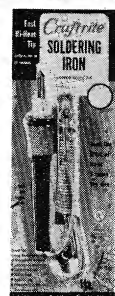
SOLDERING COPPERS

Have coppers tips, that can be heated by a flame, to perform a variety of soldering work. Fitted with wood handles, approx. 10-11" long.

No.	Weight	Head Dimensions		Each
		Length	Square	
42-501	5½ oz.	2¾"	5/8"	\$1.75
42-502	3 oz.	2¾"	1/2"	1.60
42-503	1¾ oz.	2"	3/8"	1.40
42-504	1 oz.	1¾"	3/4"	1.25
42-505	7/8 oz.	1½"	1/4"	1.15

CRAFTRITE SOLDERING IRON

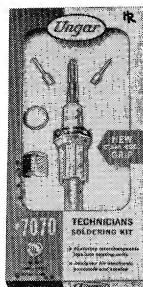
Economical one piece unit for jewelry work, kit building, household uses, etc. Has a fast Hi-Heat (750°F) copper alloy tip that melts solder in 60 seconds. Lightweight, cool grip, easy-to-handle, with full length cord.



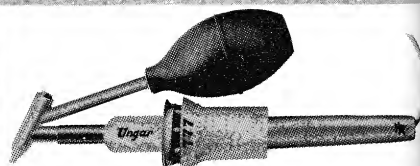
No.	Description	Each
42-563	120V AC-DC, 23½ Watts	\$2.00

TECHNICIANS SOLDERING KIT

For electronic assembly and servicing. Set contains Clean-Room Handle No. 42-565, ¼" Heating Unit No. 42-602, 3 interchangeable thread-on copper tips and a spool of 60/40 rosin core solder.



No.	Description	Set
42-562	Complete as Described	\$5.40



DE-SOLDERING TOOL

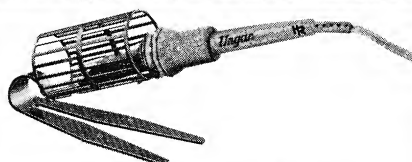
For de-soldering printed circuit boards and similar delicate assemblies so that repairs and/or replacements can be made...vacuum action lifts solder from the board.

No.	Description	Each
42-655	110-120V, 37½ Watts	\$11.95

SOLDERING IRON HOLDER

Protects the operator from accidental burns and the iron from breaking. Keeps soldering iron ready for instant use, angle can be adjusted to operator's convenience. Rugged, attaches to wall or bench.

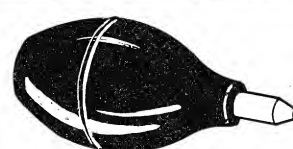
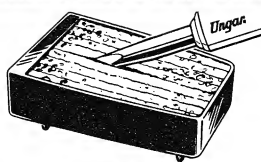
No.	Description	Each
42-650	Fits either Ungar handle	\$2.00



KLEEN-TIP SPONGE AND TRAY

Surface slits on sponge clean tips thoroughly thereby reducing tip oxidation and assuring reliable soldered connections. Tray has bracket for fastening to work bench.

No.	Description	Set
42-590	Sponge and Tray	\$1.20
42-591	2 Sponge Refills	.50



"SOLDER-OFF" BULB

For removing solder from components and printed circuit boards, etc. Teflon tip will not scratch and is easily removed for cleaning solder from the bulb.

No.	Length	Each
42-656	4½"	\$1.40

Replacement tips are available.

UNGAR SOLDERING IRONS

Pencil type soldering irons with interchangeable tips... having various temperatures... that provide the most flexible method available for soldering miniature, sub-miniature and micro-miniature work.



STANDARD HANDLE AND CORD

Uses all the Ungar tips and heating units illustrated below. Rugged, lightweight, perfectly balanced, cool and comfortable to hold. UL approved.

No.	Description	Each
42-564	110-120V, 47½ Watts	\$1.65



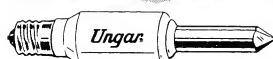
CLEAN-ROOM HANDLE AND CORD

Meets electronic clean-room standards. Handle features a heat stabilized polypropylene grip... convection cooled, easy to the touch. Its octagon shape prevents rolling. UL approved.

No.	Description	Each
42-565	110-120V, 47½ Watts	\$1.85

INTERCHANGEABLE TIPS

23½ Watts for 650°F to 700°F
37½ Watts for 750°F to 800°F
47½ Watts for 850°F to 1000°F



PYRAMID TIPS

For general purpose repair and maintenance.

No.	Description	Each
42-574	Standard, 23½W	\$1.55
42-575	Hi-Heat, 37½W	1.85
42-584	Super Hi-Heat, 47½W	3.20



CHISEL TIPS

For general purpose repair and maintenance.

No.	Description	Each
SHORT		
42-576	Standard, 23½W	\$1.55
42-577	Hi-Heat, 37½W	1.85
42-586	Super Hi-Heat, 47½W	3.20
LONG		
42-592	Standard, 23½W	1.55
42-593	Hi-Heat, 37½W	1.85
42-585	Super Hi-Heat, 47½W	3.20



BRASS KNIFE

For cutting and forming plastics.

No.	Description	Each
42-569	Standard, 20W	\$1.55

ACCESSORIES



COIL-A-CORD

An attachment that coils cord out-of-way, when not in use, and prevents cord burning.

No.	Length	Each
42-651	4'	\$1.25



ANTI-SEIZE

For use on threaded tips. Guards against seizure, improves heat transfer and protects against corrosion.

No.	Description	Each
42-652	½ oz. Tube	\$0.65

23½ Watts for 600°F to 650°F
37½ Watts for 700°F to 750°F
47½ Watts for 800°F to 850°F



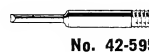
1/8" THREAD-IN UNITS AND TIPLETS

For sub-miniature micro-miniature and microscopic soldering. Tiplets, approx. dia. 1/8", screw into heating unit. Silver plated tiplets resist corrosion and last 10 times longer.

No.	Description	Each
42-566	Standard, 23½W	\$1.55
42-567	Hi-Heat, 37½W	1.85
42-568	Super Hi-Heat, 47½W	3.20



Nos 42-571/581



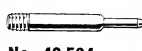
No. 42-595



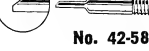
Nos. 42-572/582



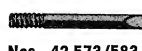
No. 42-587



No. 42-594



No. 42-588



Nos. 42-573/583



Nos. 42-596/597

TIPLETS

No.	Description	Each
PENCIL		
42-571	Standard	\$0.25
42-581	Iron Clad, Silver Plated	.60
OFFSET PENCIL		
42-572	Standard	.25
42-582	Iron Clad, Silver Plated	.60
STEPPED PENCIL		
42-594	Iron Clad, Silver Plated	.60
CHISEL		
42-573	Standard	.25
42-583	Iron Clad, Silver Plated	.60
STEPPED CHISEL		
42-595	Iron Clad, Silver Plated	.60
TAPERED NEEDLE		
42-587	Iron Clad, Silver Plated	.60
MICRO-SPADE		
42-588	Iron Clad, Silver Plated	.60
ULTRA FINE		
42-596	Standard	.60
42-597	Iron Clad, Silver Plated	1.20

23½ Watts for 600°F to 650°F
37½ Watts for 700°F to 750°F
47½ Watts for 800°F to 850°F



1/4" THREAD-ON UNITS AND TIPS

For general purpose, sub-miniature, and micro-miniature work. Units thread-on the heating unit. Silver plated tips resist corrosion and last 10 times longer.

No.	Description	Each
42-601	Standard, 23½W	\$1.75
42-602	Hi-Heat, 37½W	1.90
42-603	Super Hi-Heat, 47½W	3.20



Nos. 42-610/611



No. 42-624



Nos. 42-614/615



Nos. 42-618/619

TIPLETS

No.	Description	Each
PENCIL		
42-610	Standard	\$0.35
42-611	Iron Clad, Silver Plated	.75
CHISEL		
42-614	Standard	.35
42-615	Iron Clad, Silver Plated	.75
STEPPED MICRO-SPADE		
42-624	Iron Clad, Silver Plated	.75

PYRAMID TIPS

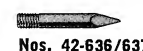
No.	Description	Each
42-618	Standard	\$0.35
42-619	Iron Clad, Silver Plated	.75



3/8" THREAD-IN UNIT AND TIPLETS

For general purpose and miniature work.

No.	Description	Each
42-630	Super Hi-Heat, 47½W	\$3.20



Nos. 42-636/637



Nos. 42-640/641/642

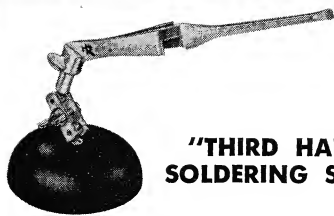


No. 42-646

TIPLETS

No.	Length	Description	Each
PENCIL			
42-636	1"	Standard	\$0.25
42-637	1"	Iron Clad, Silver Plated	.65
CHISEL			
42-640	1"	Standard	.25
42-641	1"	Iron Clad, Silver Plated	.65
42-642	1 3/4"	Iron Clad, Silver Plated	1.00
OFFSET CHISEL			
42-646	1 3/4"	Iron Clad, Silver Plated	1.00

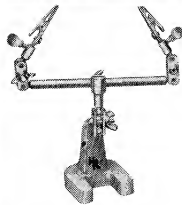
SOLDERING



**"THIRD HAND"
SOLDERING STAND**

Holds self-locking or slide-locking tweezers securely allowing user to keep both hands free. Swivel on heavy metal base allows work to be positioned at any angle.

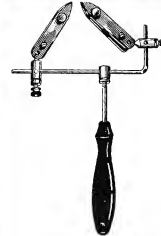
No.	Description	Set
42-404R	With 6½" Tweezer	\$3.20



**DOUBLE
CLAMP
SOLDERING
STAND**

Any two pieces that are to be soldered together can be held securely with this device until joined. Ball joints permit work to be positioned at any angle. Has heavy base.

No.	Description	Each
42-405	With 2 Alligator Clamps	\$4.60

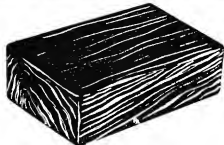


**PARKER
SOLDERING
CLAMP**

A convenient device for holding small parts such as jewelry, chain, etc. to be soldered. Ball joint held tweezer can be set at any angle.

No.	Description	Each
42-401	With 2 Tweezers	\$3.40

X-REFERENCE: For additional clamps see tweezer page 117



**CHARCOAL
SOLDERING
BLOCKS**

Chemically prepared for soldering. Under a flame the charcoal glows and reflects heat back on the work making the flame more effective. Easily punctured to hold work.

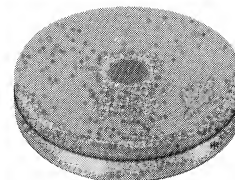
No.	Size	Each
42-421	3¼" x 2¼"	\$0.75
42-422	4¾" x 3"	1.40
42-423	7" x 4"	2.45



ASBESTOS SOLDERING PADS

Does not spark or crack under flame. Heats evenly, holds heat longer.

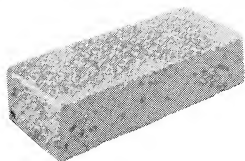
No.	Size	Each
42-300	6" x 2½" x ½"	\$0.35
42-308	4" x 4" x ¼"	.25
42-309	12" x 12" x ½"	1.80



**PERFECTION
SOLDERING
BLOCK**

Made of asbestos sheeting, coiled and placed in metal receptacle. Block is comparatively soft permitting steady pins to be inserted to hold the work being soldered.

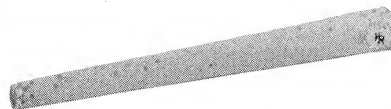
No.	Dia.	Thick	Each
42-246	5½"	1"	\$1.25



MAGNESIA SOLDERING BLOCK

Prepared magnesium soldering block of a soft consistency easily punctured to hold work.

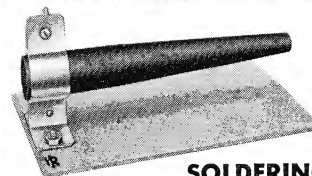
No.	Size	Each
42-290	6" x 3" x 1½"	\$0.55



**ASBESTOS RING
SOLDERING STICK**

Asbestos mandrel used when soldering rings, tapered to hold all sizes.

No.	Length	Each
42-247	8"	\$1.00



**CARBON
RING
SOLDERING STAND**

Holds ring leaving both hands free. Base is made of asbestos board, and clamps can be unscrewed to replace carbon mandrel. Can also be used with electric soldering machine.

No.	Length	Each
42-406	6"	\$3.25

PICKLE PANS

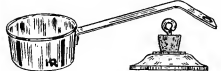
Made of copper to resist the corrosive action of acids and pickling solutions. Can also be used as boiling pans with various solutions.



HEAVY COPPER
With hollow handle
for wood attachment.

No.	Dia.	Approx. Weight	Cost
35-102½	2½"	13 oz.	\$4.25 per lb.
35-103	3"	1 lb. 4 oz.	
35-103½	3½"	1 lb. 4 oz.	
35-104	4"	1 lb. 12 oz.	
35-104½	4½"	2 lbs.	
35-105	5"	3 lbs. 8 oz.	
35-105½	5½"	4 lbs.	

LIGHTWEIGHT, WITH COVER



Known as a boiling-out cup. Has metal handle.

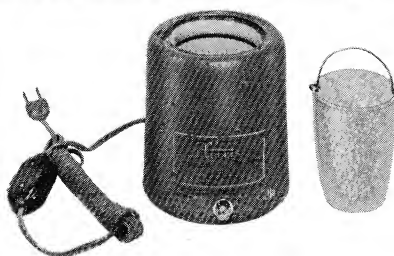
No.	Dia.	Depth	Each
35-120	2"	7/8"	\$2.50

LIGHTWEIGHT, WITH WOOD HANDLE



Deep copper bowl fastened to a wire rod and fitted with wood handle for heat resistance.

No.	Dia.	Depth	Each
35-186	2"	7/8"	\$2.50



FERRIS ELECTRIC PICKLERS

For fast pickling of gold, silver and other non-ferrous jewelry metals at the bench. Units automatically keep the solution at the right temperature and prevent it from boiling away. The baskets which hold the articles are made of a plastic that is far superior in acid resistance than any metal basket.

No. 35-113 — Is a small, compact (5" x 5") unit that draws only 30 watts and operates on any 115-Volt AC or DC current.

No. 35-114 — Has a 1½ quart capacity for volume work. It is 7¾" x 7", draws 125 Watts, and operates on a 115-Volt AC line. Both units have an on-off switch, and come with instructions, a dip basket, and a supply of Ferris Super-Pickle.

No.	Description	Set
35-113	Small Model	\$18.50
35-114	Large Model	40.00



**PICKLING
COMPOUNDS**

Granular dry acid compounds for pickling, cleaning, and removing surface oxidation and scale from silver, copper, duraluminum, and other non-ferrous metals. A safe substitute for sulphuric acid. Non-hazardous, non-inflammable, non-explosive. The 2½ lb. can makes a gallon of solution.

No.	Size	Can
51-871	2½ lb.	\$1.48
51-872	10 oz.	.60

Specify Sparex or Ferris



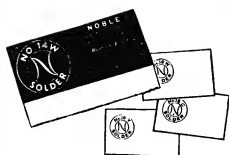
COPPER TONGS

Have curved tips for lifting objects from pickling and other acid type solutions.

No.	Length	Each
47-278	9"	\$2.25

HARD SOLDERS AND SOLUTIONS

For use in jewelry making while working with gold, silver, platinum and other metals that require high temperatures. Helps make a more stronger and lasting union than soft solders. All are quality materials that will not breakdown under high temperatures.



NOBLE SOLDERS

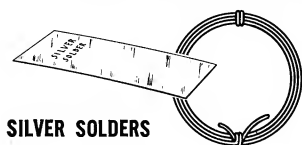
"N" brand solders have superior color, ductility, and strength. All the gold solders are easy flowing. Packed in envelopes of 1 Dwt.

GOLD SOLDERS

No.	For	Per Dwt.
GREEN		
51-952	10 Kt	\$2.12
51-954	14 Kt	2.80
PINK		
51-962	10 Kt	1.78
51-964	14 Kt	2.50
WHITE		
51-970	Low Kt	.74
51-972	10 Kt	2.12
51-974	14 Kt	2.80
51-976	18 Kt	3.56
YELLOW		
51-980	Low Kt	.54
51-981	8 Kt	1.46
51-982	10 Kt	1.78
51-983	12 Kt	2.12
51-984	14 Kt	2.50
51-986	18 Kt	3.30

PLATINUM SOLDERS

No.	Description	Per Dwt.
51-936	Hard	\$7.08
51-937	Medium	5.48
51-938	Soft	4.50
51-939	Extra Soft	3.00



SILVER SOLDERS

Easy flowing solder, for hard soldering, available in wire or sheet form.

No.	Style	Weight	Each
51-940	Sheet	1/4 oz.	\$0.65
51-943	Wire	1/4 oz.	.80

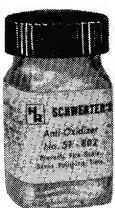
EUREMA

- a flux • a pickle
- a cleaner



For use on gold, gold filled, silver, brass, iron, steel, nickel, aluminco and plated articles. Retains its effectiveness even when subject to extreme temperatures for prolonged periods of time.

No.	Size	Bottle
51-841	3 oz.	\$0.65



SCHWARTER'S ANTI-OXIDIZER

Forms a film on gold and silver that prevents oxidation (fire scale) from forming on the metal. Does not attack or remove good metal.

No.	Size	Bottle
51-802	3/4 oz.	\$0.35



SCHWARTER'S FLUORON

A well known solution for making hard soldering as easy as soft soldering. Can be used on gold, silver, platinum and other metals. Preserves temper and color of metal.

No.	Size	Bottle
51-851	1 oz.	\$0.35
51-852	2 oz.	.45
51-853	3 oz.	.50
51-856	Pint	1.90
51-857	Quart	3.30



SCHWARTER'S STAINLESS STEEL FLUX

A powdered flux for use with steel and other hard solders. Simplifies the problem of soldering jewelry made with stainless steel.

No.	Size	Jar
51-863	1/2 oz.	\$0.65



KROM-FLUX

For general use with gold and silver solders. Can also be used on stainless steel, chromeplate, etc.

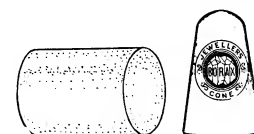
No.	Size	Jar
51-864	1 oz.	\$1.40



ANTI-SLATE FLUX

A solution, used without borax, for soldering platinum, gold and silver.

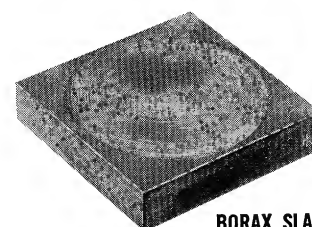
No.	Size	Bottle
51-806	3/4 oz.	\$0.90



BORAX

Jewelers prepared borax for making flux for soldering jewelry, etc. Dissolves easily when rubbed on borax slate.

No.	Size	Each
51-905	2 oz. Cake	\$0.30
51-915	4 oz. Cone	.60



BORAX SLATES

Square blocks with concave centers for mixing borax flux.

No.	Size	Each
42-453	3 1/2" Square	\$2.50
42-455	5" Square	3.00

SOFT SOLDERS AND SOLUTIONS

Easy-flowing, low-temperature solders and cold solders that form a good strong bond.



SOFT SOLDER

Coils of extra-easy flowing round, drawn solder packed in envelopes.

No.	Weight	Pkg.
51-930	1 oz.	\$0.40



BISMUTH SOLDER

Recommended for pewter, silver plate, etc. Flows at low temperature.

No.	Size	Each
51-945	1 oz. Bar	\$0.80



SOLDERALL

Soft solder paste in tube. Just apply to parts to be soldered and heat. No flux needed.

No.	Size	Tube
51-861	1 1/2 oz.	\$0.85



TIX SOLDER AND SOLUTIONS

Tix is the hardest soft solder on earth. It melts at 275°F and has a holding power of 4300 lbs. per sq. inch. The Flux is harmless to clothing and hands, and is absolutely non-corrosive. No. 51-869 the Tix Anti-Flux limits the spreading of solder to unwanted areas.

No.	Description	Each
51-867	Solder	\$3.00
51-868	Flux	1.00
51-869	Anti-Flux	1.00



DURO PLASTIC ALUMINUM

For repairing nicks and gouges in metals or for joining. This cold solder requires no tools, heat or flame, and can be filed, sawed, and polished.

No.	Size	Tube
51-862	5 1/2 oz.	\$1.00



Schwarter's

SOFT SOLDERING FLUID

For use on all metals except aluminum. Will not cause rust.

No.	Size	Bottle
51-821	3/4 oz.	\$0.35
51-826	Pint	1.90
51-827	Quart	3.30



NOKORODE

A non-corrosive soldering flux, in paste form, for use on all metals except aluminum.

No.	Size	Can
51-865	2 oz.	\$0.30

STAKING TOOLS

K&D STAKING TOOLS

Provide the sensitive feel and micrometer accuracy necessary for staking, setting jewel bearings, broaching miniature holes and keyways, punching, riveting, flaring, crimping, swagging, forming, etc. when working on precision parts.

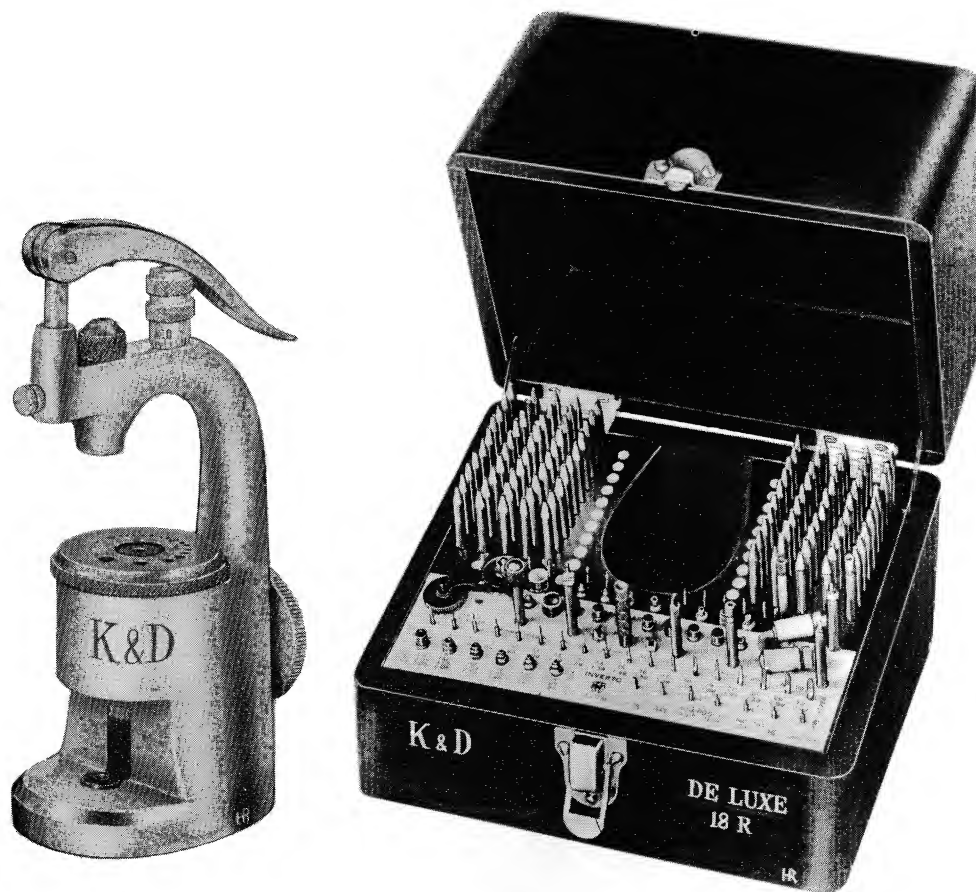
INVERTO SERIES

Have K&D's special cut-out frame design that permits the user to invert punches so that they also can be used as stumps, has a chrome plated frame to prevent rust, with a friction bushing in its head to hold punches during positioning.

The 28-Hole Dieplate has been made from an alloy steel correctly tempered for maximum hardness and then diamond tested for

toughness. A small indentation on the die is the result of the test and your guarantee of a properly tempered dieplate.

Punches and Stumps have been correctly tempered in electrically controlled gas furnaces to withstand all normal wear and are available in the widest possible selection of sizes and styles.



INVERTO DELUXE No. 18R

Comes complete with Friction Jeweling Attachment that includes 18 reamers and holder, 7 sub punches and holder, and 6 graduated flat face hollow stumps.

Set contains:

- 100 specially selected punches for miniature instruments and watches.
- 20 selected stumps.
- 10 sub punches and holder for driving-out screws and similar work. Individual Order No. 43-316.
- 2 balance staff removers. Individual Order Nos. 43-050 and 050B.
- 2 adjustable roller remover stumps. Individual Order Nos. 43-350B and 350C.
- 2 sets of cannon pinion closing punches and stumps. Individual Order Nos. 43-323 and 323B.

No.	Description	Set
43-018R	In Fitted Mahogany Box	\$135.00

INVERTO DELUXE No. 18L

Comes complete with Friction Jeweling Attachment that includes 18 reamers and holder, 7 sub punches and holder, and 6 graduated flat face hollow stumps.

Set contains:

- 100 specially selected punches for miniature instruments and watches.
- 20 selected stumps.

No.	Description	Set
43-018L	In Fitted Mahogany Box	\$125.00

STAKING TOOL PARTS

Description and Price			
Series No.	Box	Die	Frame, Die, & Set Punch
43-018R & 018L	\$17.00	\$12.00	\$47.50
43-018B	14.00	12.00	37.50
43-599 thru 43-602	12.00	9.00	25.00



INVERTO No. 18B

Uses the same frame as the Deluxe Series but does not have the Friction Jeweling Lever. Can easily be converted to inserting jewel bearings and bushings by using attachment No. 43-018X on Page 104.

Set contains:

- 100 specially selected punches for miniature instruments and watches.
- 20 selected stumps.
- 10 sub punches and holder for driving-out screws and similar work.
- 2 adjustable roller remover stumps.

No.	Description	Set
43-018B	In Fitted Mahogany Box	\$103.50

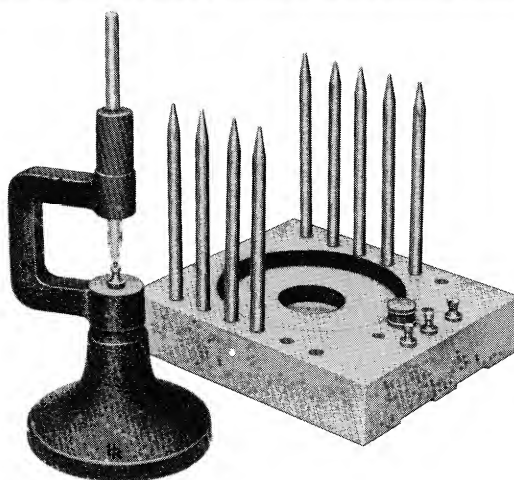


JUNIOR INVERTO SERIES

The Junior Inverso Series, as its name implies, is a junior version of the DeLuxe Inverso Staking Tool for use by those who do limited staking tool work or as a starter set. It is constructed with the same precision craftsmanship as the DeLuxe Inverso and is only slightly smaller in size with a 26 hole Dieplate instead of the regular 28. By using the attachment No. 43-530 on Page 104 it can be used for friction jeweling.

No.	Contains	Set
43-599	30 Punches and 10 Stumps	\$52.00
43-600	60 Punches and 20 Stumps	68.00
43-601	80 Punches and 20 Stumps	77.50
43-602	100 Punches and 20 Stumps	87.00
*43-610	120 Punches and 20 Stumps	96.50

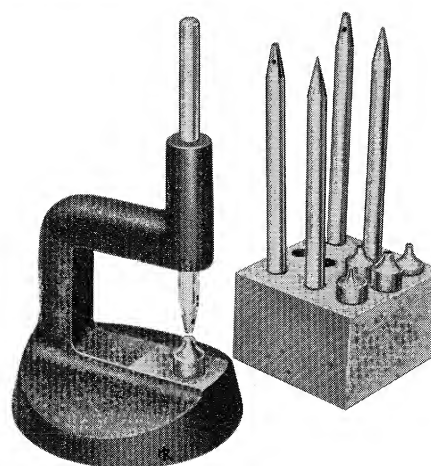
*In 18B box.



K&D MIDGET STAKING TOOL

A small compact staking set, frame is only 4 1/4" high, that can be kept on the bench for instant use. Made according to the same exacting standards as the larger K&D sets and to take regular K&D punches and stumps. Fitted wood base holds both frame, punches and stumps.

No.	Contains	Set
43-906	10 Punches and 5 Stumps	\$11.50



NIT SIZE STAKING TOOL

A small compact staking set, frame is only 2 3/4" high, that can be kept on the bench for instant use. Saves time by not having to line up a large staking tool for small jobs. Frame is black-crackle finish and punches and stumps have fitted wood block.

No.	Contains	Set
43-900	5 Punches and 5 Stumps	\$10.50

STAKING TOOLS

AUTOMATIC STOPPING DEVICE FOR HAND AND JEWEL SETTING

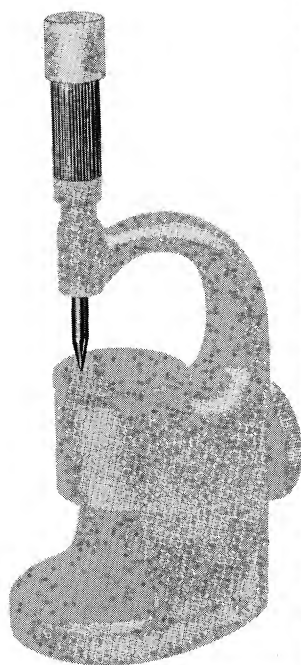
This simplified attachment fits on K&D Staking Tools frames for:

- Friction Jeweling
- Hand Setting
- Friction Staffing

The Automatic Stopping Device is an inexpensive, lightweight attachment that uses any punch in your staking tool. Just by turning the corrugated sleeve you can raise or lower the travel of the punch, making minute adjustments, without having to fiddle with complicated micrometer settings.

The selected setting will not change as long as you do not turn the sleeve.

Pressure is applied by tapping lightly with a mallet or by using your hand. A nylon cap protects the striking area from damage and also acts as a cushion when applying pressure by hand.



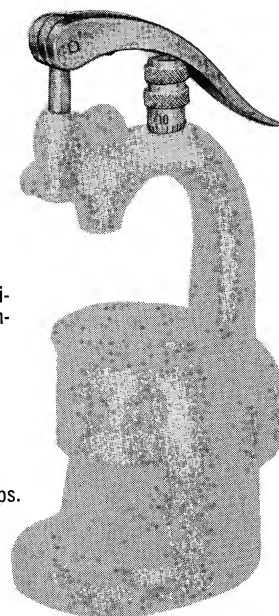
No.	Each
43-530	\$3.50

K&D FRICTION JEWELING ATTACHMENT SET

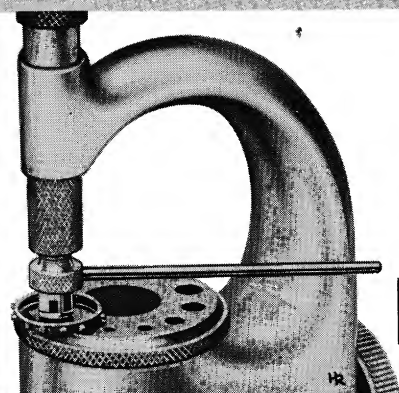
For converting your No. 43-018B Staking Tool to friction jeweling. Lever type operation with micrometer stop that reads to 1/100mm.

SET CONTAINS:

- Lever operated attachment and micrometer stop for 18B frame numbers starting with "S". Individual Order No. 43-540S.
- 18 reamers and holder. Individual Order No. 43-322B.
- 7 sub punches and holder. Individual Order No. 43-321.
- 6 graduated flat face hollow stumps. Individual Order No. 43-324.
- Cone miller for removing burs. Individual Order No. 43-130.
- Large deluxe box.



No.	Description	Set
43-018X	Complete Set as described	\$47.00
43-540S	Lever and micrometer stop only	12.50

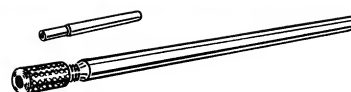


K&D BALANCE STAFF REMOVERS

Remove balance staffs quickly and easily without damaging the balance arm. Fits in gap between dieplate and head of frame... select size by measuring opening, subtracting approximately $\frac{3}{16}$ ", then selecting size listed below.

No.	Type	Sizes	Each
43-050	Pocket Watch	$\frac{5}{16}$ "- $\frac{3}{4}$ "- $\frac{7}{8}$ "-1" & $1\frac{1}{8}$ "	\$2.65
43-050B	Bracelet Watch		2.65

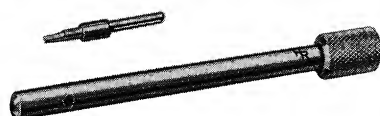
Specify Order No. and Size when ordering.



K&D SET OF JEWEL PUSHERS AND HOLDER

For friction jeweling. Set contains 7 concave pushers with graduated hole sizes, 0.68mm to 1.75mm, that cover the complete range of watch jewels, and 1 holder. In fitted wood stand.

No.	Description	Set
43-321	Complete Set	\$3.30



K&D SET OF REAMERS AND HOLDER

For friction jeweling. Set contains 18 reamers, sizes 0.59mm to 2.99mm. They are .01mm smaller than jewel so that they will fit snugly. Come with friction type holder.

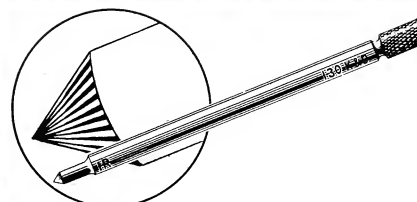
No.	Description	Set
43-322B	Complete Set	\$11.00



K&D SET OF FRICTION JEWELING STUMPS

For friction jeweling. Set contains 6 stumps with hole sizes graduated from 0.85mm to 3.05mm and mounted in a fitted wood stand.

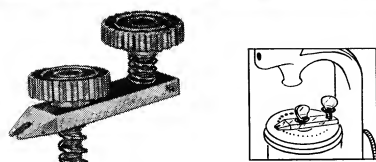
No.	Description	Set
43-324	Complete Set	\$4.50



K&D CONE MILLER

For removing burs from jewel settings. Fits all K&D frames. Length $3\frac{1}{8}$ ".

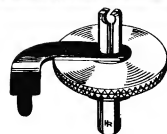
No.	Tip Dia.	Each
43-130	.115"	\$1.00



K&D FACE PLATE

For holding tiny bridges, jewel settings, while reaming-out hole and setting friction jewels. Can be clamped on dieplate or stump block.

No.	Description	Set
43-330	Clamps, Screws & Springs	\$4.25



K&D ROLLER REMOVER STUMPS

Gap in jaws can be adjusted by turning knurled collar. Fits in dieplate of staking tool with bent arm fitting into die hole to prevent turning.

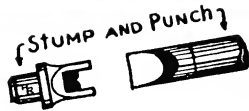
No.	Size	Each
43-305B	Pocket Watch	\$2.15
43-305C	Bracelet Watch	2.15



K&D PUNCHES FOR PALLET ARBORS

Set of 3 punches with specially designed double shoulder holes that accommodate both the pivot and part of the body of the pallet arbor. A drop of oil in the hole will keep the pallet arbor from falling out of the punch.

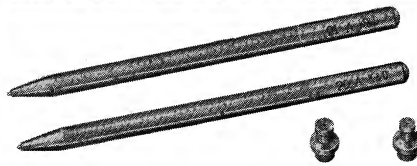
No.	Size	Set
43-331	For All Bracelet Sizes	\$2.50



K&D CANNON PINION CLOSING PUNCH AND STUMP

Stump is slotted to hold cannon pinion and punch is shaped like a wedge. Cannon pinion can be tightened by denting with this punch and stump set.

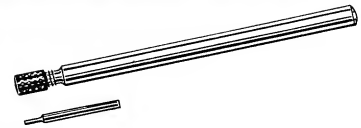
No.	Size	Set
43-323	Pocket Watch	\$1.75
43-323B	For Smaller Watches	1.75



K&D PUNCHES AND STUMPS FOR INCABLOC ROLLERS

These punches are shaped to fit the grooves in the bottoms of incabloc rollers. Set contains punches 20A, 21A and 22A and stumps 62 and 67.

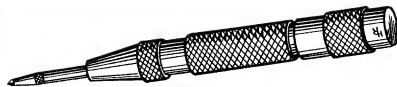
No.	Description	Set
43-329A	3 Punches, 2 Stumps	\$3.10



K&D SUB PUNCHES AND HOLDER

For driving out screws which have broken-off in watch plates, etc. Set of 10. Sizes range from 0.25mm to 1.38mm, with screw chuck holder.

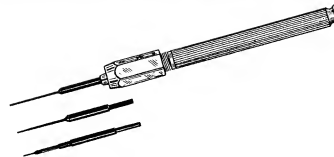
No.	Description	Set
43-316	Complete Set	\$2.75



AUTOMATIC CENTERING AND RIVETTING PUNCH

For centering, staking, rivets, removing screws, etc. Automatically sets and releases the striking mechanism and is adjustable for heavy or light strokes.

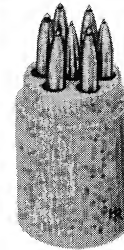
No.	Description	Set
38-839	With Centering Point	\$3.80
38-840	With Centering & Riveting Points	4.40



RIVETTING PUNCHES

For removing screws and similar work. Set contains 20 assorted hardened steel flat punches with a holder.

No.	Sizes	Set
38-838	0.50mm to 1.00mm	\$2.45

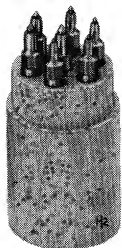


HOLE CLOSING PUNCHES

For closing hole in metal plates such as those found in watches, precision instruments, etc. Set contains 7 assorted sizes in a hardwood stand.

No.	Sizes	Price
38-851	0.50mm to 2.50mm	\$6.40 set
38-853	Specify individual*	1.00 ea.

*Specify Order No. and Individual No. (1 thru 7) when ordering.



HOLE CLOSING SPRING PUNCHES

For closing holes in the metal plates of clocks, meters, and similar size instruments. Set contains 7 spring punches, sizes 2.0, 2.1, 2.6, 3.0, 3.5, 4.1 and 4.6mm in a hardwood stand.

No.	Sizes	Price
38-852	Set of all 7	\$6.40 set
38-854	Specify Individual*	1.00 ea.

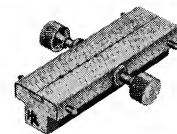
*Specify Order No. and Individual Size when ordering.



RIVETTING STAKES

For rivetting or punching holes. Can be used in vise or on bench. Made of hardened steel in 3 models with graduated hole sizes.

No.	Holes	Each
39-702	12	\$0.75
39-703	24	1.00
39-704	36	1.50



ADJUSTABLE RIVETTING STAKE

By turning the adjusting screws on either side the opening between the two halves can be adjusted, thus changing the size of the ten holes. Made of hardened steel and brass it can be used in a vise or on the bench.

No.	Holes	Each
39-726	10 Adjustable	\$4.25

STAMPS

Made of a hardened tool steel to stamp many types of metal surfaces with Sunken or Raised letters, words, numbers, etc. Sunken impression means the letters or figures are indented into the article being stamped. Stamps which make a raised impression actually indent a small rectangular impression on which the letters or figures are raised.



BENT STYLE

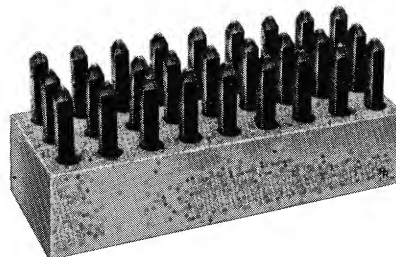
For stamping the insides of rings (Sizes 1 to 16 by U.S. Standard, and larger). Letters are 1/45" high.

No.	Wording	Impression	Each
38-901	PLATINUM	Sunken	\$7.00
38-902	STERLING		7.00
38-904	10% IRID. PLAT.		7.00
38-910	10K		2.45
38-914	14K		2.45
38-918	18K	Raised	2.45
38-924	14K		2.45



STRAIGHT STYLE

No.	Wording	Impression	Each
38-922	STERLING	Sunken	\$6.50



LETTER STAMPS

Make sunken impressions. Set contains each letter of the alphabet and includes an ampersand ("&") and period. Packed in a hardwood fitted case with cover.

No.	Description	Set
38-971	1/16" high letters	\$7.50

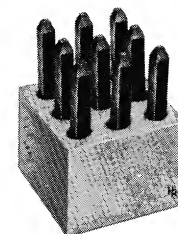


FIGURE STAMPS

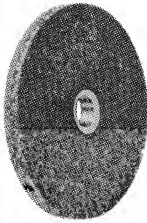
Make sunken impressions. Set contains number punches 0 thru 9... the 9 being used upside down to make the 6. Packed in a hardwood fitted case with cover.

No.	Description	Set
38-961	1/16" high letters	\$2.50

STONES

SILICON CARBIDE GRINDING STONES

For rough grinding or shaping of steel and other hard metals including tungsten carbide. Fast cutting, long lasting, almost as hard as diamond dust.

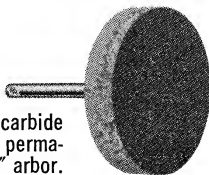


WHEELS ON LEAD CENTERS

For mounting on either straight or tapered arbors. Specify grit (fine—medium—coarse) when ordering.

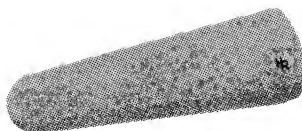
No.	Dimensions			Each
	Dia.	Thick.	Hole	
44-101 1/4	1"	1/8"	1/4"	\$1.00
44-102 1/4		1/4"	1/4"	1.00
44-111 1/4		3/8"	1/4"	1.00
44-112 1/4	1 1/2"	1/4"	1/4"	1.00
44-113 1/4		3/8"	1/4"	1.20
44-114 1/4		1/2"	1/4"	1.20
44-122	2"	1/4"	3/8"	1.40
44-122 1/4		1/4"	1/4"	1.40
44-123		3/8"	3/8"	1.40
44-123 1/4		3/8"	1/4"	1.40
44-124		1/2"	3/8"	1.40
44-124 1/4		1/2"	1/4"	1.40
44-132	2 1/2"	1/4"	3/8"	1.75
44-132 1/4		1/4"	1/4"	1.75
44-133		3/8"	3/8"	1.75
44-133 1/4		3/8"	1/4"	1.75
44-134		1/2"	3/8"	1.75
44-134 1/4		1/2"	1/4"	1.75
44-142	3"	1/4"	3/8"	1.75
44-142 1/4		1/4"	1/4"	1.75
44-142 1/2		1/4"	1/2"	1.75
44-144		1/2"	3/8"	2.20
44-144 1/4		1/2"	1/4"	2.20
44-144 1/2		1/2"	1/2"	2.20
44-146		3/4"	3/8"	2.20
44-146 1/4		3/4"	1/4"	2.20
44-146 1/2		3/4"	1/2"	2.20
44-148		1"	3/8"	2.75
44-148 1/4		1"	1/4"	2.75
44-148 1/2		1"	1/2"	2.75
44-154	4"	1/2"	3/8"	3.65
44-154 1/4		1/2"	1/4"	3.65
44-154 1/2		1/2"	1/2"	3.65
44-156		3/4"	3/8"	3.65
44-156 1/4		3/4"	1/4"	3.65
44-156 1/2		3/4"	1/2"	3.65

WHEEL ON ARBOR



A fast cutting silicon carbide grinding wheel that is permanently mounted on a 3/16" arbor.

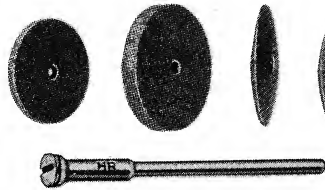
No.	Dimensions		Each
	Dia.	Thick.	
44-402	2"	3/8"	\$1.50



EMERY LATHE CONES

For grinding insides of rings, etc. Length approximately 2 3/4", diameter 1". Have lead centers with 1/4" wide spindle hole. Available in grits: Medium and Extra Fine.

No.	Description	Price
44-495	Set of 2	\$4.50



SMALL GRINDING DISCS AND WHEELS WITH ARBOR

Sets of assorted fine grit, silicon carbide knife edge discs and square edge wheels in various diameters. Each set comes with a 3/32" arbor.

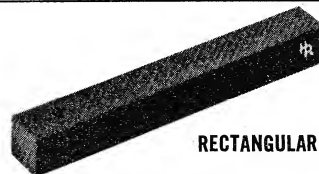
No.	Dimensions		Set
	Disc. Dia.	Wheel	
44-203 (set of 3)	1/2"	—	\$1.25
	5/8"	—	
	3/4"	—	
44-204 (set of 4)	1/2"	—	1.50
	5/8"	1/2" x 1/8"	
	3/4"	—	
44-206 (set of 6)	1/2"	1/2" x 1/8"	2.00
	5/8"	5/8" x 1/4"	
	3/4"	3/4" x 1/8"	
44-207 (set of 4)	—	1" x 1/8"	1.50
	—	1" x 1/4"	
	—	1" x 3/8"	



RECTANGULAR BENCH STONES

For rapid sharpening of cutting tools. Coarse and fine grits are bonded together into a single stone, and are used with oil. Packaged in card-board box.

No.	Dimensions	Each
44-601	6" x 2" x 1"	\$3.00
44-603	8" x 2" x 1"	3.75



RECTANGULAR SLIP

Small carborundum stone used for grinding and finishing metal parts. Medium grit only.

No.	Dimensions	Each
44-811	4" x 1 1/2" x 1 1/2"	\$0.85



SQUARE SCOTCH STONES

Used for finishing, excellent for taking out tool marks and scratches. Used dry or with water. Made of a soft slate-like stone.

No.	Dimensions	Each
44-820	5" x 1/8"	\$0.25
44-822	5" x 1/4"	.30
44-824	5" x 3/8"	.35
44-826	5" x 1/2"	.40
44-828	5" x 3/4"	.50
44-829	5" x 1"	.80

INDIA STONES

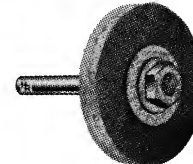
Fast cutting, made of tough aluminum oxide abrasives. Only light oil application is needed for best results.



WHEEL ON LEAD CENTER

For mounting on either straight or tapered arbors. Available in fine grit only.

No.	Dimensions			Each
	Dia.	Thick.	Hole	
44-451	1 1/2"	1/4"	1/4"	\$4.85



WHEEL ON ARBOR

A fast cutting aluminum oxide wheel that is permanently mounted on a 3/16" arbor.

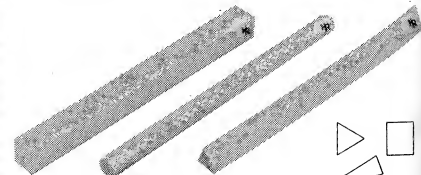
No.	Dimensions		Each
	Dia.	Thick.	
44-431	1 1/2"	1/4"	\$6.00



RECTANGULAR BENCH STONES

Used with oil to sharpen cutting tools, screwdrivers, etc. Fine quality stones that can be used on both sides. Available in a choice of grits.

No.	Dimensions	Each
COMBINATION FINE AND COARSE GRITS		
44-606	6" x 2" x 1"	\$2.70
44-608	8" x 2" x 1"	3.20
MEDIUM GRIT		
44-621	4" x 1" x 1 1/2"	1.15
44-626	6" x 2" x 1"	2.55
44-628	8" x 2" x 1"	3.00
FINE GRIT		
44-611	4" x 1" x 1 1/2"	1.15
44-616	6" x 2" x 1"	2.55
44-618	8" x 2" x 1"	3.00



SLIPS

Small stones of various shapes for finishing by hand. Only light oil application is needed for best results.

No.	Dimensions	Each
KNIFE		
44-665	4" x 1/4"	\$1.35
SQUARE		
44-683	4" x 1/4"	.75
TRIANGULAR		
44-693	4" x 1/2"	.95



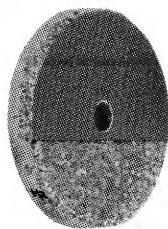
PENCIL

For touch-up and finishing. Has a 1/8" square stone mounted in wood handle.

No.	Length	Each
44-649	7"	\$1.35

HARD ARKANSAS STONES

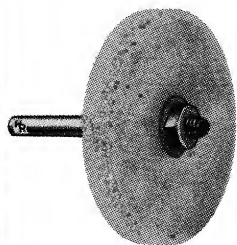
Natural, close density oilstones having qualities that make them unequalled in sharpening the finest tools such as surgical knives, gravers, etc.



WHEELS

Natural stones for mounting on either straight or tapered arbors.

No.	Dimensions			Each
	Dia.	Thick.	Hole	
44-441	1 1/2"	3/4"	1/4"	\$4.95
44-442	2"	1/4"	1/4"	6.25



WHEELS ON ARBORS

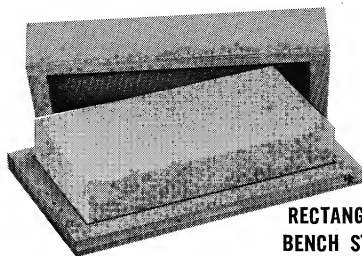
For producing a high polish. Natural close density stones are permanently mounted on 3/16" arbors.

No.	Dimensions		Each
	Dia.	Thick.	
44-421	1 1/2"	1/4"	\$5.45
44-422	2"	1/4"	6.75

COMBINATION ARKANSAS AND INDIA BENCH STONES

Rough sharpen on the India Stone and finish sharpening on the Arkansas Stone. The two stones are mounted on a reversible metal frame, and can be removed and replaced when worn out. Inside cover of the hardwood box is felt lined to retain oil.

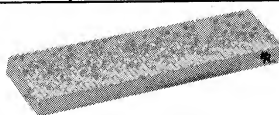
No.	Dimensions	Each
44-727	7" x 2" x 1"	\$19.85



RECTANGULAR BENCH STONES

For rapid sharpening and finishing of cutting tools. Stones are permanently mounted in hardwood boxes.

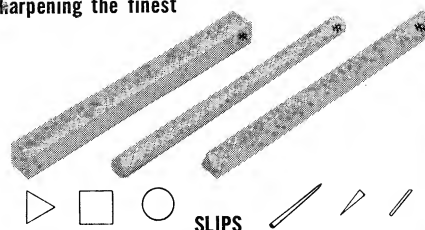
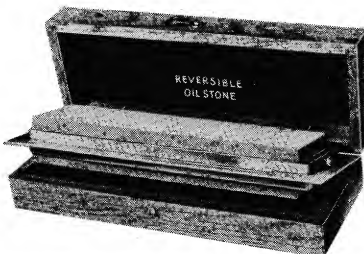
No.	Dimensions	Each
44-503	3 1/2" x 1" x 3/4"	\$3.25
44-504	4" x 2" x 3/4"	7.00
44-505	5" x 2" x 3/4"	8.25
44-506	6" x 2" x 3/4"	9.50
44-507	7" x 2" x 3/4"	11.00
44-508	8" x 2" x 3/4"	12.50



PENKNIFE PIECES

Small rectangular stones for sharpening and finishing penknives and similar size cutting tools.

No.	Dimensions	Each
44-543	3" x 1" x 3/16"	\$2.25
44-544	4" x 1" x 3/16"	2.65



SLIPS

Ultra fine grit natural stones for finishing and sharpening of tools, dies, machine parts, etc. Available in special shapes for easy deburring, chamfering, and fitting of precision parts.

No.	Dimensions	Each
BEVEL		
44-550	3 1/2" x 3/8" x 1/2"	\$2.00
DIAMOND		
44-555	3 1/2" x 3/8" x 1/4"	2.75
FLAT		
44-560	3 1/2" x 1/2" x 3/16"	2.25
KNIFE		
44-565	3 1/2" x 1"	2.25
POINTED		
44-570	4" x 1/4"	2.75
ROUND		
44-572	4" x 1/4"	2.00
OVAL		
44-573	3" x 1/2" x 3/16"	2.75
SQUARE		
44-581	2 1/2" x 1/8"	1.50
44-582	3 1/2" x 3/16"	1.50
44-583	3 1/2" x 1/4"	1.50
44-584	3 1/2" x 3/16"	1.50
TRIANGULAR		
44-591	2 1/2" x 1/8"	1.50
44-592	3 1/2" x 3/16"	1.50
44-593	3 1/2" x 1/4"	1.50
44-594	3 1/2" x 3/16"	1.50



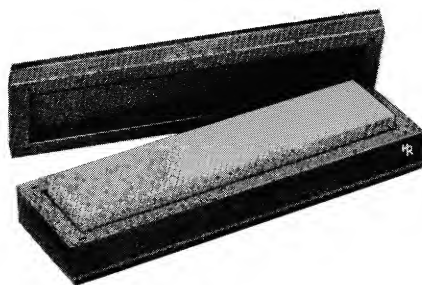
PENCIL

For touch-up and finishing. Has a 1/8" square stone mounted in wood handle.

No.	Length	Each
44-549	7"	\$2.50

ARKERAM STONES

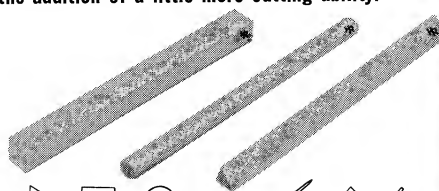
Made from Arkansas stone powder that has been solidified by fire. They have all the qualities of the regular Arkansas stones with the addition of a little more cutting ability.



RECTANGULAR BENCH STONES

Used with oil for rapid sharpening and finishing of cutting tools. Stones are packed in hardwood box and can be used on both sides.

No.	Dimensions	Each
44-704	4" x 1" x 1/2"	\$1.75
44-705	5" x 2" x 7/8"	2.75
44-706	6" x 2" x 1"	3.25
44-708	8" x 2" x 1"	4.25

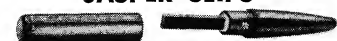


SLIPS

Ultra fine grit stones for finishing and sharpening of tools, dies, machine parts, etc. Available in special shapes for easy deburring, chamfering, and fitting of precision parts.

No.	Dimensions	Each
SQUARE		
44-712	4" x 1/4"	\$0.85
TRIANGULAR		
44-716	4" x 1/4"	.85
FLAT		
44-720	4" x 1/4" x 1/8"	.85
KNIFE		
44-721	4" x 1" x 3/16"	1.25
HALF ROUND		
44-722	4" x 1/4" x 1/8"	1.25
ROUND		
44-723	4" x 1/4"	1.25
POINTED		
44-724	3 3/4" x 3/16"	1.75

JASPER SLIPS



A natural red stone, should be used dry, that cuts and polishes in one operation. Nos. 44-760/780/790 are mounted in plastic handles with cover.

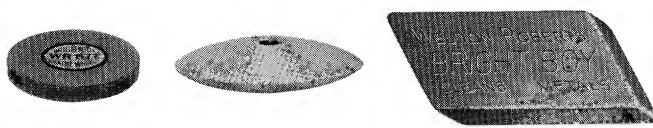
No.	Dimensions	Description	Each
FLAT			
44-765	2½" x ¼" x ⅛"	Unmounted	\$2.25
44-760		With Handle	2.75
SQUARE			
44-785	2¼" x ¼"	Unmounted	2.25
44-780		With Handle	2.75
TRIANGULAR			
44-795	2¼" x ¼"	Unmounted	2.25
44-790		With Handle	2.75



ARKALITE WHEEL ON ARBOR

An artificial Arkansas Stone that produces a finish similar to medium hard Arkansas, though it cuts faster. Wheel is permanently mounted on a 3/16" arbor.

No.	Dimensions		Each
	Dia.	Thick.	
44-405	2"	1/4"	\$3.95



BRIGHTBOY WHEELS AND TABLET

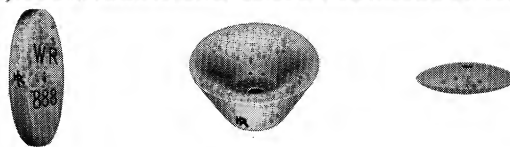
For burring, finishing and polishing. The resilient rubber binder cushions the aluminum oxide abrasive, and bridges the gap between grinding and buffing. Recommended for use on stainless steel, chrome and hard metals.

WHEELS

No.	Dimensions			Unit	Price
	Dia.	Thick.	Hole		
SQUARE EDGE					
44-292	7/8"	1/8"	1/4"	Box of 12	\$1.50
44-292L	7/8"	1/8"	1/16"	Box of 100	7.80
44-296	1 1/2"	3/16"	1/4"	Each	.65
44-297	2"	1/4"	1/4"	Each	1.30
44-298	3"	3/8"	1/4"	Each	1.85
TAPER EDGE					
44-293	5/8"	—	1/16"	Box of 20	1.50

HAND TABLETS

No.	Dimensions	Unit	Price
44-299	2 1/4" x 1 1/8" x 3/8"	Each	\$0.55



FINE PUMICE WHEELS AND DISCS

For cleaning, polishing and finishing. Made from natural rubber with carefully graded pumice grains distributed evenly throughout, to insure uniform results. The "light action" produces a smooth surface on gold, silver and other soft metals.

WHEELS

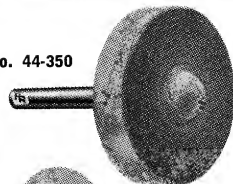
No.	Dimensions			Unit	Per Box
	Dia.	Thick.	Hole		
SQUARE EDGE					
44-272	5/8"	3/32"	1/16"	Box of 48	\$1.25
44-272L	5/8"	3/32"	1/16"	Box of 350	6.30
44-278	7/8"	1/8"	1/16"	Box of 36	1.25
44-278L	7/8"	1/8"	1/16"	Box of 250	6.30
CUP SHAPE					
44-282	1/2"	—	—	Box of 24	1.25
TAPER EDGE					
44-288	3/8"	—	1/16"	Box of 36	1.25
44-289	5/8"	—	1/16"	Box of 36	1.25
44-289L	5/8"	—	1/16"	Box of 250	6.30

ASSORTMENT

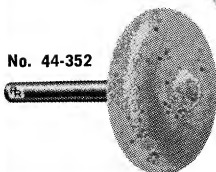
Contains pumice wheels Nos. 44-272/278/282/288/289 and Brightboy wheel No. 44-293.

No.	Description	Set
44-280	Box of 36 pieces	\$1.25

No. 44-350



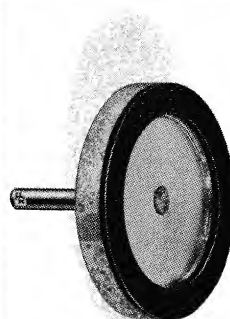
No. 44-352



CRYSTAL GRINDING WHEELS

A grey stone composition that does the work of grinding watch crystals quickly and well. Wheels are permanently mounted on 3/8" arbors. No. 44-350 has square edges while No. 44-352 has round edges.

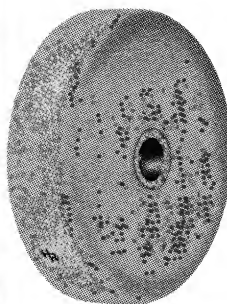
No.	Dimensions		Each
	Dia.	Thick.	
44-350	1 1/2"	3/32"	\$1.50
44-352	1 1/2"	3/32"	



DIAMOND CHARGED WHEEL

Used for sharpening tungsten carbide gravers and similar hard-metal tools. Not to be used on soft metals. Diamond dust is impregnated into a bonding material (1/4" wide, 1/32" deep) that is mounted on the face of a metal wheel that is permanently attached to a 3/8" arbor.

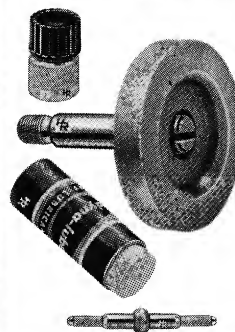
No.	Dia.	Each
44-401	2"	\$34.95



NORTON CRYSTAL GRINDING WHEELS

Made of a special red stone for grinding watch crystals. One edge of the wheel is square and the other rounded. Wheels are mounted on lead centers, with hole, to fit on either straight or tapered arbors.

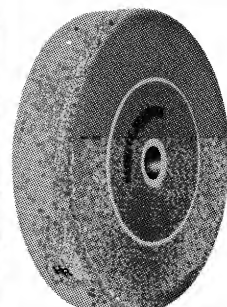
No.	Dimensions			Each
	Dia.	Thick.	Hole	
44-394	3 1/2"	3/4"	3/8"	\$4.25
44-394 1/2	3 1/2"	3/4"	1/2"	4.25
44-396	5"	3/4"	1/2"	6.55



DIAMOND LAP

For sharpening tungsten carbide gravers, small drills and other tools requiring an extremely smooth edge. Used with diamond compound which is supplied with lap. Accessory for impregnating compound into lap is included, as well as Dyna-lube which will clean and dry lubricate the lap and prolong its life. Mounted on arbor chuck to fit precision watchmakers lathes.

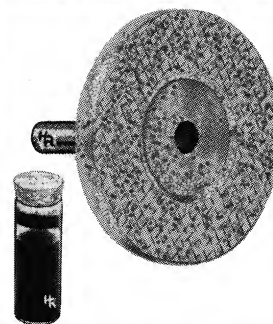
No.	Arbor Style	Set
44-404	"WW" Pattern	\$8.95
44-404 1/2	Moseley Pattern	8.95



ALOXITE SHELLAC CRYSTAL GRINDING WHEELS

A special brown composition of fine aluminum oxide grains mixed with shellac that make fast cutting wheels for grinding crystals. Wheels have one square edge and one round edge, and are mounted on lead centers with hole to fit either straight or tapered arbors.

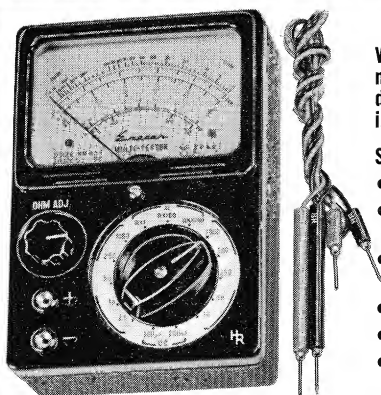
No.	Dimensions			Each
	Dia.	Thick.	Hole	
44-391	3"	3/8"	3/8"	\$4.75
44-392	3 1/2"	3/4"	3/8"	6.55



CARBIDE LAP

For rough grinding to remove chips, or for polishing to obtain a bright surface. Can be used on tungsten carbide gravers, small drills and other tools. The metal lap is mounted on a 3/8" arbor. Set includes lap, a vial of lapping compound, a brush for applying the compound and an instruction sheet.

No.	Dia.	Set
44-403	1 1/2"	\$4.65



MULTI-METER

With high resistance to prevent current drain on the miniature batteries found in Hearing Aids, Watches, etc., during testing, and for electrical-electronic trouble shooting.

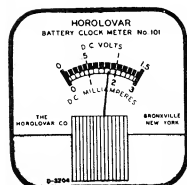
SPECIFICATIONS:

- Precision wire wound divider resistors
- Sensitivity: 20,000 ohms per volt DC
5,000 ohms per volt AC
- Measuring Ranges are: 0-2.5, 10, 50, 250, and 1000 Volts AC and DC
- DC Current Ranges are: 0-100 μ A and 0-25mA
- Resistance Multipliers are: X1, X100 and X1000
- Decibels: -20db to +22DB

The HR Multi-Meter is a small (3½" x 1½" x 5"), highly accurate precision testing device, housed in a rugged metal case with a large selector switch for range settings and an easy to read scale. Comes completely wired...not a kit...with instructions that makes servicing simple. Weighs only 15 ounces.

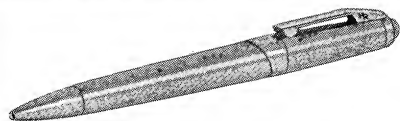
No.	Description	Set
45-258	Complete with test leads, instructions, and batteries	\$17.95

HOROLOVAR CLOCK BATTERY TESTER



Pinpoints faults in the electrical circuit, shows current drain on the battery, and battery voltage strength. Will not drain the battery because little current is used to obtain a reading. Comes with instruction sheet.

No.	Description	Each
45-256	1.5V - 3 milli Amps - 500 Ohms	\$7.50



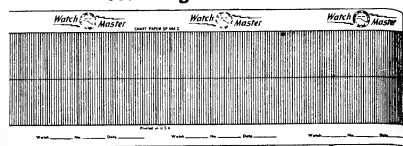
DIAMOND TESTER

One stroke of this tester will tell you whether or not you are looking at a real diamond or an imitation. If it scratches, it is an imitation. Absolutely foolproof.

No.	Description	Each
45-254	With Pocket Clip	\$5.75

WATCH TIMER PAPERS

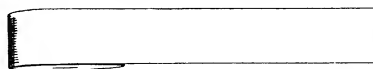
Refill rolls for the most popular watch rate recording machines.



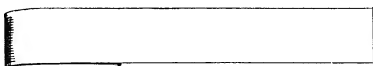
No.	Description	Roll
45-269	Watchmaster Drum Style	\$0.55



No.	Description	Roll
45-270	Watchmaster Tape Style	\$1.35



No.	Description	Roll
45-274	Vibrograf, #VS-390	\$0.80



No.	Description	Roll
45-275	Vibrograf, #B-100A	\$0.80



33-738

33-739

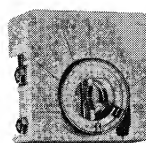


ELECTRIC WATCH MOVEMENT HOLDERS

For Landeron 4750 and 4751. No. 33-738 is for assembly and disassembly. No. 33-739 is for checking the finished movement.

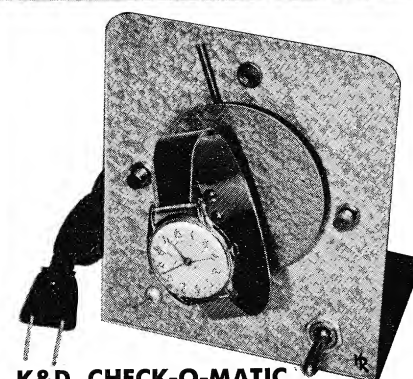
No.	Description	Each
33-738	—	\$3.75
33-739	Without Battery	6.95

FEED SUPPORT



For checking current consumption or observing amplitude in hanging position, when used with meter No. 45-258. Readings can also be obtained from an oscilloscope or watch-rating machine.

No.	Description	Each
45-259	Without Battery	\$8.25
63-289	Battery Only	1.00



K&D CHECK-O-MATIC

For checking the winding mechanism of automatic watches. The natural arm motion of the Check-O-Matic simulates normal conditions of wear so closely that if a watch would not wind properly on the wrist, it will not wind on the machine. It can accommodate watches using either 180° or 360° oscillation... for 360°, place one plug in the top well of the faceplate, for 180° place two plugs in side wells as shown in illustration. Only 15 minutes on the machine is all that is necessary to wind any automatic. Has on-off bat switch.

No.	Description	Each
45-252	110V, AC Current	\$12.95

TEST STONES

For determining the karat content of gold objects. Object and Gold Needles (No. 45-201) are rubbed on stone and tested with acid for a like reaction.

No.	Dimensions	Each
45-220	2" x 1½" x ½"	\$2.95
45-225	2½" x 1½" x ½"	3.40
45-230	3" x 1½" x ½"	3.75

TEST NEEDLES

Used to determine the karat content of gold objects. Needles are rubbed on Test Stones (Nos. 45-220/225/230 and residue is tested with acid along with object residue for like reaction.

No.	Karat of Needles	Set
45-201	4, 6, 8, 10, 12, 14, 16, 18 & 20	\$7.60

ACID BOTTLES

Safe containers for acid, made of clear glass. Ground glass stoppers prevent evaporation and are used to apply acid.

No.	Style	Contents	Price
11-652	Round	1½ oz.	\$2.10
11-656	Square	½ oz.	1.30



TEST SET

For appraisal and testing of gold, silver, platinum, brass, nickel and German Silver. Set contains three acid bottles with ground glass stoppers and applicators; a test stone (No. 45-220); a set of test needles (No. 45-201); and salts for making Schwerter's testing fluid.

No.	Description	Set
45-215	Packed in Hardwood Case	\$17.00

for gripping, manipulating, bending, probing

Though tweezers may look the same, and have the same basic functions, there are definite differences in their design, duties and physical properties. Some of these differences are explained in the paragraphs below, in the charts, and under the illustrations of the tweezers.

Dumont or Peer Style—Precision watchmakers tweezers made in Switzerland. These tweezers are forged from the best grades of metals, and machined to a smooth satin finish. Extensive hand operations are used in shaping, adjusting, and finishing the points.

Renard or Boley Style—Excellent tweezers, also made in Switzerland, but without the hand craftsmanship devoted to the Dumont or Peer style. The matched points have received some finishing at the tips.

HR Standard Tweezers—Miscellaneous special purpose styles as well as inexpensive tweezers are shown in this group.

TWEezer METALS

The chart below shows general property relationships among the various metals used in the manufacturing of tweezers. In addition, note that the points of the harder metals will wear longer and are less subject to bending. The softer metals will not scratch delicate parts and usually have additional desirable properties such as being non-magnetic, etc.

Metal	Brand Name	Hardness	Non-Magnetic	Corrosion Resistance
Carbon Steel	Peer Supreme Dumont Renard Nickel Plated	Very Hard	No	Poor
Stainless Steel	Peer Stainless Dumont Inox Renard	Hard	No	Satisfactory
Non-Magnetic Stainless Alloy	Peer-oxel Dumoxel	Soft	Yes	Good
Carpenter 20	Peer Acid-Resist	Soft	Yes	Excellent
Titanium	Peer Titanium	Medium Hard	Yes	Very Good
German Silver	Peer Supreme Dumont	Very Soft	Yes	Fair
Brass	Renard	Very Soft	Yes	Fair

TEFLON POINTS

Industrial users can have a non-stick, anti-friction coating of Teflon, 1½ mill thick, applied to the points of all tweezers illustrated on the following pages. The slippery surface of Teflon resists acids because it is chemically inert and solvent resistant; it can be used at temperatures

ranging from —390°F to 500°F; and has outstanding insulating characteristics.

PRICES . . . Minimum Order 1 Dozen (may be assorted)

1 Doz. \$2.00 ea. / 3 Doz. \$1.50 ea. / 1 Gross \$1.00 ea.

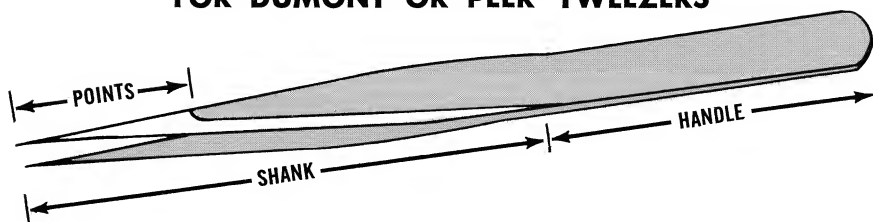
SELECTOR CHART

FOR DUMONT OR PEER TWEEZERS

POINTS:

- TIP**
- Needle-Sharp
 - Very Sharp
 - Sharp
 - Blunted
 - Rounded-Blunt
 - Concave-Convex
 - Cutting

- FINISH**
- Extra-Honed
 - Honed
 - Plain



SHANKS:

- PROFILE**
- Tapered
 - Indented
 - Curved
 - Hooked

- EDGES**
- Beveled
 - Flat

The various types of tweezer construction illustrated above can be applied to the numerous patterns to describe basic differences and similarities. See chart below.

PATTERN	APPROX. LENGTH	SHANKS		POINTS		FEATURES
		PROFILE	EDGES	FINISH	TIPS	
1	4¾"	Tapered	Beveled	Plain	Sharp	
2	4¾"	Indented	Flat	Plain	Blunt	
2A	4¾"	Indented	Flat	Plain	Rounded-Blunt	Similar to Pattern No. 2, except that the blunt tips have been rounded.
3	4⅝"	Tapered	Beveled	Honed	Very Sharp	Similar to Pattern No. 1, except that points have received more finishing.
3C	4¼"	Tapered	Beveled	Honed	Very Sharp	A smaller version of Pattern No. 3.
4	4¼"	Indented	Beveled	Extra-Honed	Needle-Sharp	
5	4¼"	Indented	Beveled	Extra-Honed	Needle-Sharp	Similar to Pattern No. 4, except that shanks are deeply indented.
7	4½"	Curved	Beveled	Plain	Very Sharp	
7B	4½"	Curved	Beveled	Plain	Very Sharp	Similar to Pattern No. 7, except that inside of tips are serrated.
11	4¾"	Tapered	Beveled	Plain	Sharp	Similar to Pattern No. 1, but made of German Silver.
12	4⅝"	Tapered	Beveled	Honed	Very Sharp	Similar to Pattern No. 3, but made of German Silver.
H	3½"	Tapered	Flat	Honed	Rounded-Blunt	Stubby thick blades.
00	4½"	Tapered	Flat	Honed	Blunt	
0	4½"	Tapered	Flat	Honed	Very Sharp	
0C	3½"	Tapered	Flat	Honed	Very Sharp	A smaller version of Pattern No. 0.
8	4¼"	Straight	Flat	Plain	Beveled-Blunt	For wire straightening.
6	4½"	Hooked	Flat	Plain	Sharp	For wire coiling.
10/1	4¼"	Indented	Flat	Honed	Concave-Convex	For wire bending, angling, etc.
10/3	4¼"	Indented	Flat	Honed	Concave-Convex	Same as Pattern No. 10/1, except for larger tip.
14C	4½"	Curved	Flat	Plain	Cutting	Side cutter.
15	4¼"	Tapered	Flat	Plain	Cutting	End cutter.
15A	4½"	Hooked	Beveled	Honed	Cutting	Oblique cutter.
15AP	4½"	Hooked	Beveled	Honed	Cutting	Similar to Pattern No. 15A, but with parallel cutting edges.

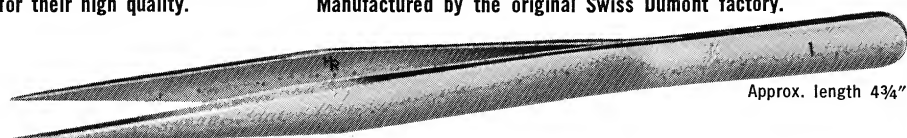
GENUINE PEER® TWEEZERS

Swiss made tweezers, long recognized for their high quality.

ILLUSTRATIONS ARE ACTUAL SIZE

PATTERN Nos. 1 and 11

For general use (assembly, inspection, sorting). These tweezers have tapered shanks with beveled edges; points are sharp and plain-finished. Pattern No. 11 is made of non-magnetic German Silver and is the same length as No. 1.

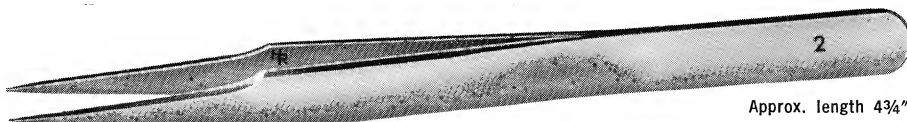


Approx. length 4¾"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
1	Stainless Steel	46-201	\$2.35	46-151	\$3.45
1	Carbon Steel	46-301	2.10	46-101	2.90
1	Non-Mag. Stainless	46-351	3.10	46-251	4.10
1	Titanium	46-371	6.10	—	—
11	German Silver	46-311	2.80	46-111	3.60

PATTERN Nos. 2 and 2A

General use tweezers that have sturdier points than Pattern No. 1... tips are slightly wider and thicker. Shanks are indented and have flat edges for gripping object with tip or side. The plain-finished points are available either with a fine square tip (Pattern 2) or a wider rounded tip (Pattern 2A). No. 2A has been used in the electronic industry to handle Silicon and Germanium Wafers.

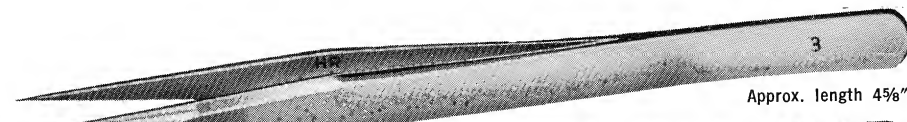


Approx. length 4¾"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
2	Stainless Steel	46-202	\$2.50	46-152	\$3.70
2	Carbon Steel	46-302	2.25	46-102	3.10
2	Non-Mag. Stainless	46-352	3.25	46-252	4.25
2	Titanium	46-372	6.25	—	—
2A	Stainless Steel	46-202A	3.40	—	—
2A	Non-Mag. Stainless	46-352A	3.90	—	—
2A	Carpenter 20	46-362A	4.40	—	—

PATTERN Nos. 3, 3C and 12

Excellent tweezers for handling all miniature and micro-miniature parts. They have tapered shanks with beveled edges; points have been honed and are very sharp. Pattern No. 12 is made of non-magnetic German Silver and is the same length as No. 3.



Approx. length 4⅝"



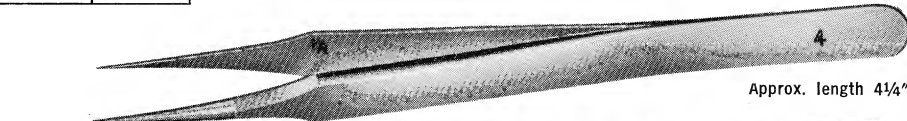
Approx. length 4¼"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
3	Stainless Steel	46-203	\$2.50	46-153	\$3.70
3	Carbon Steel	46-303	2.25	46-103	3.10
3	Non-Mag. Stainless	46-353	3.25	46-253	4.25
3	Carpenter 20	46-363	3.75	—	—
3	Titanium	46-373	6.25	—	—
12	German Silver	46-312	3.25	46-112	3.80

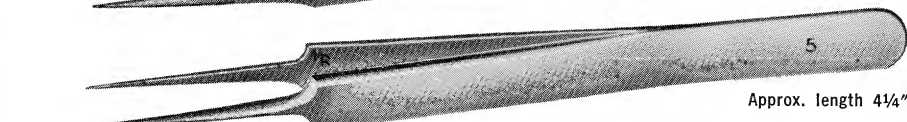
Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
3C	Stainless Steel	46-203C	\$2.50	46-153C	\$3.70
3C	Carbon Steel	46-303C	2.25	46-103C	3.10
3C	Non-Mag. Stainless	46-353C	3.25	46-253C	4.25
3C	Carpenter 20	46-363C	3.75	—	—
3C	Titanium	46-373C	6.25	—	—

PATTERN Nos. 4 and 5

Ideally suited for handling microscopic parts. These tweezers have indented shanks with beveled edges and points that have been extra-honed to a needle-like shape and sharpness. When maximum visibility is needed select Pattern No. 5, with its very narrow shanks.



Approx. length 4¼"



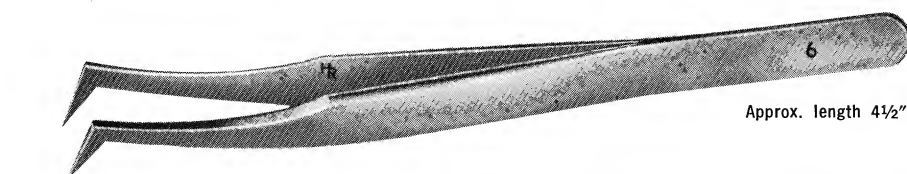
Approx. length 4¼"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
4	Stainless Steel	46-204	\$3.15	46-154	\$4.05
4	Carbon Steel	46-304	2.90	46-104	3.70
4	Non-Mag. Stainless	46-354	3.90	46-254	4.90
4	Carpenter 20	46-364	4.40	—	—
4	Titanium	46-374	6.90	—	—

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
5	Stainless Steel	46-205	\$3.45	46-155	\$4.75
5	Carbon Steel	46-305	3.20	46-105	4.15
5	Non-Mag. Stainless	46-355	4.20	46-255	5.20
5	Carpenter 20	46-365	4.70	—	—
5	Titanium	46-375	7.20	—	—

PATTERN No. 6

Sharp hooked points for wire wrapping, forming, bending and coiling. The angled points can also be used to reach hard-to-get-at spots.



Approx. length 4½"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
6	Stainless Steel	46-206	\$3.75	46-156	\$5.50
6	Carbon Steel	46-306	3.50	46-106	5.00
6	Non-Mag. Stainless	46-356	4.50	46-256	5.70

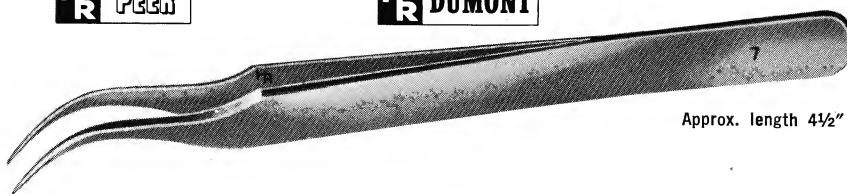
TWEEZERS

PATTERN Nos. 7, 7A and 7B

HR PEER®

HR DUMONT

Excellent tweezers for handling all miniature and micro-miniature parts and components. Its shape permits the user to rest his hand on the bench during assembly operations. The curved shanks have beveled edges; points have a plain-finish, but are very sharp. Pattern No. 7A is slightly stronger than No. 7. Pattern 7B has non-slip serrated jaws.



Approx. length 4 1/2"

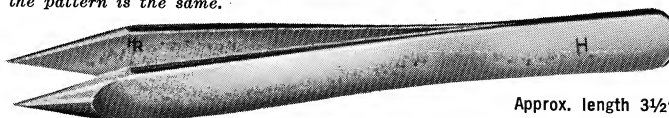
Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
7	Stainless Steel	46-207	\$3.75	46-157	\$5.50
7	Carbon Steel	46-307	3.50	46-107	5.00
7	Non-Mag. Stainless	46-357	4.50	46-257	5.70
7	Carpenter 20	46-367	5.00	—	—
7	Titanium	46-377	7.50	—	—
7A	Carbon Steel	—	—	46-107A	5.00

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
7B	Stainless Steel	46-207B	\$3.75	46-157B	\$5.50
7B	Carbon Steel	46-307B	3.50	46-107B	5.00
7B	Non-Mag. Stainless	46-357B	4.50	46-257B	5.70

Some of the new Dumont tweezers are stamped 7e instead of 7. However, the pattern is the same.

PATTERN H

Stubby, wide shanks allow you to get a good strong grip on the object. Generally used in pairs for wire bending, hairspring adjusting, etc. They have tapered shanks with flat edges; points are honed and have round blunt tips.

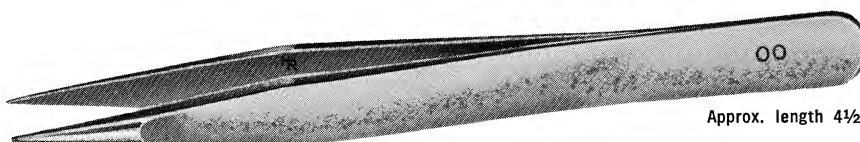


Approx. length 3 1/2"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
H	Stainless Steel	46-233	\$2.50	—	—
H	Carbon Steel	—	—	46-133	\$3.10

PATTERN OO

A general utility tweezer (assembly, inspection, sorting, etc.). Shanks are thick and have flat edges that enable the user to grip and hold the object with the edge as well as the tip. Points are honed and have blunt tips.

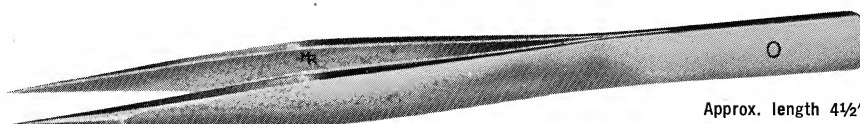


Approx. length 4 1/2"

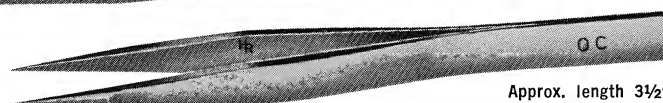
Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
OO	Stainless Steel	46-240	\$2.65	46-190	\$3.95
OO	Carbon Steel	46-340	2.40	46-140	3.45
OO	Non-Mag. Stainless	46-390	3.40	46-290	4.40

PATTERNS O and OC

Excellent tweezer for handling miniature and micro-miniature parts. They have tapered shanks, not as thick as Pattern OO, with flat edges; points have been honed and are very sharp.



Approx. length 4 1/2"



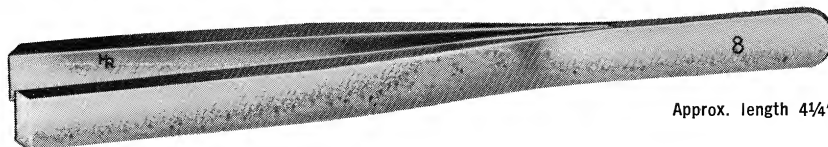
Approx. length 3 1/2"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
O	Stainless Steel	46-200	\$2.65	46-150	\$3.95
O	Carbon Steel	46-300	2.40	46-100	3.45
O	Non-Mag. Stainless	46-350	3.40	46-250	4.40

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
OC	Stainless Steel	46-200C	\$2.65	46-150C	\$3.95
OC	Carbon Steel	46-300C	2.40	46-100C	3.45
OC	Non-Mag. Stainless	46-350C	3.40	46-250C	4.40

PATTERN No. 8

Straightens terminal lead wires, needle point indicators, hands, pivots, etc. Blades are extra thick with blunt jaws and have beveled ends for better visibility.

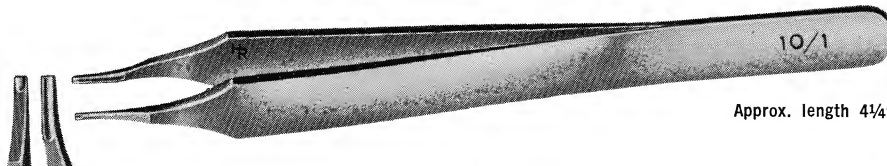


Approx. length 4 1/4"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
8	Stainless Steel	46-208	\$5.45	—	—
8	Carbon Steel	46-308	4.95	46-108	\$6.95

PATTERN Nos. 10/1 and 10/3

Concave-Convex jaws for bending and angling fine wires, especially in extremely tight places. Pattern No. 10/1 is .045" wide at the tip. Pattern No. 10/3 is .071" wide.



Approx. length 4 1/4"

Pattern	Metal	Peer		Dumont	
		No.	Price	No.	Price
10/1	Carbon Steel	46-310/1	\$6.95	46-110/1	\$7.00
10/3	Carbon Steel	46-310/3	6.95	46-110/3	7.00



Miscellaneous — Modified versions of the patterns shown on the previous pages, and tweezers designed for a particular purpose.

All tweezers shown on this page are Genuine Dumont

PATTERN OA

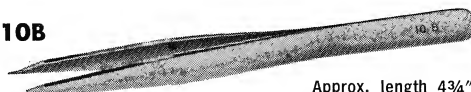


Approx. length 4 5/8"

Similar to Pattern O, except that the shanks are notched and the points have been rounded and finished for fine assembly work and hairspring adjusting.

Pattern	Metal	No.	Each
OA	Carbon Steel	46-100A	\$3.80

PATTERN No. 10B



Approx. length 4 3/4"

Similar to Pattern O, except that the points have been notched, rounded and finished for coiling light wire and shaping hairspring centers.

Pattern	Metal	No.	Each
10B	Carbon Steel	46-110B	\$6.00

PATTERN OOC



Approx. length 4"

A small version of Pattern OO with its thick blades, blunt tips and shanks, and flat edges.

Pattern	Metal	No.	Each
OOC	Carbon Steel	46-140C	\$3.45

PATTERNS A and AC



Approx. length 4 1/2"

Approx. length 4 1/8"

Similar to Patterns OO and OOC with their thick shanks and blunt points, except that the points are plain-finished and the tips are slightly wider.

Pattern	Metal	No.	Each
A	Carbon Steel	46-147	\$3.45
AC	Carbon Steel	46-147C	3.45

PATTERN AA



Approx. length 5"

Similar in shape to Renard or Boley style Pattern AA, except that the shanks are slightly thinner and the points have been honed. Excellent tweezers for handling miniature parts.

Pattern	Metal	No.	Each
AA	Non-Mag. Stainless	46-682	\$3.20

PATTERN P



Approx. length 4 3/4"

Tips are slightly thicker and sturdier than those on Pattern No. 1.

Pattern	Metal	No.	Each
P	Carbon Steel	46-141	\$2.60

PATTERNS S and SC



Approx. length 4 1/4"

Approx. length 4 3/4"

Less expensive versions of Pattern Nos. 3 & 3C; points still retain the ability to handle miniature and micro-miniature parts.

Pattern	Metal	No.	Each
S	Carbon Steel	46-143	\$2.75
SC	Carbon Steel	46-143C	2.75

PATTERN GG

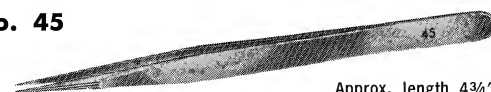


Approx. length 5 1/8"

Similar in shape to Renard or Boley style Pattern GG, except that the shanks are slightly thinner and the points have been rounded and honed to a needle-like shape and sharpness. Excellent for handling miniature parts.

Pattern	Metal	No.	Each
GG	Non-Mag. Stainless	46-686	\$3.20

PATTERN No. 45



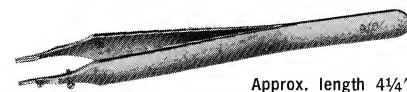
Approx. length 4 3/4"

For removing burs, oxidation, etc., from contact surfaces of relays, switches and similar contact points of electric watches. Jaws have a raised convex surface, 3/16" in length, polished to a smooth, high finish.

Pattern	Metal	No.	Each
45	Carbon Steel	46-565	\$8.70

PATTERN Nos.

9/0 thru 9/3



Approx. length 4 1/4"

Special points, in 4 different sizes, for coiling brequet hairsprings. All have adjustable arbors.

Pattern	Metal	No.	Each
9/0	Carbon Steel	46-109/0	\$18.00
9/1		46-109/1	17.25
9/2		46-109/2	17.25
9/3		46-109/3	17.25

PATTERN Nos.

10/00 thru 10/6



Approx. length 4 1/8"

Concave-Convex jaws for bending and angling fine wire, especially in extremely tight places, and for shaping the over coil on hairsprings.

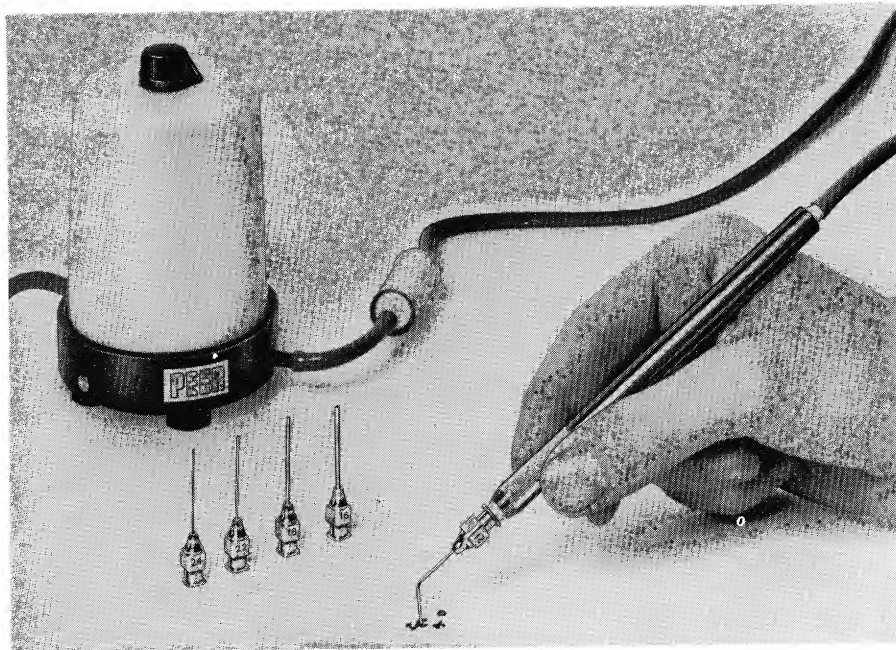
Pattern	Metal	Tip Width	No.	Each
10/00	Carbon Steel	.031"	46-110/00	\$9.00
10/0		.036"	46-110/0	7.00
10/1		.045"	46-110/1	7.00
10/2		.055"	46-110/2	7.00
10/3		.071"	46-110/3	7.00
10/4		.083"	46-110/4	7.00
10/5		.087"	46-110/5	7.00
10/6		.099"	46-110/6	7.00



Production Line — Very light versions of the patterns shown on the previous pages. Excess metal has been shaved from both the handles and shanks.

Pattern	Similar to Pattern No.	Metal	No.	Each
50	0	Carbon Steel	46-500	\$4.20
50C	0C	Carbon Steel	46-500C	4.20
51	1	Carbon Steel	46-501	3.90
52	2	Carbon Steel	46-502	4.20

Pattern	Similar to Pattern No.	Metal	No.	Each
53	3	Carbon Steel	46-503	4.20
53C	3C	Carbon Steel	46-503C	4.20
54	4	Carbon Steel	46-504	4.70
55	5	Carbon Steel	46-505	5.20



HR PEER® VACUUM TWEEZER

Handles delicate miniature objects without scratching, breaking or pinching; avoids contamination of the part; and performs tweezer functions such as sorting, picking up, holding, carrying, etc.

The HR Peer Vacuum Tweezer is a lightweight, portable unit completely assembled and ready for immediate operation as soon as the proper size tip is selected and installed. Vacuum is created at the tip by placing the forefinger over the control hole on the pencil handle... to break the vacuum just remove your finger from the hole.

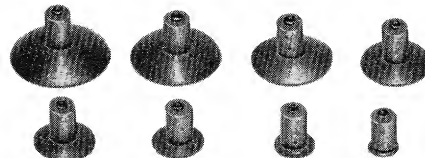
The vacuum generator is small (4½" high, 2¾" in diameter), adjustable so that you can dial the exact vacuum pressure, and creates up to 14" Hg Vacuum (an air flow of 125 cubic inches per minute). Unit is completely noiseless during operation.

SET CONTAINS:

- Vacuum generator
- Anodized aluminum cylindrical probe
- Inline filter to protect the generator
- On-Off switch
- 4 foot length of tubing
- 5 stainless steel probe tips

Gauge	O.D.	I.D.
14.....	.071"	.052"
16.....	.065"	.047"
20.....	.035"	.022"
22.....	.028"	.016"
24.....	.022"	.011"

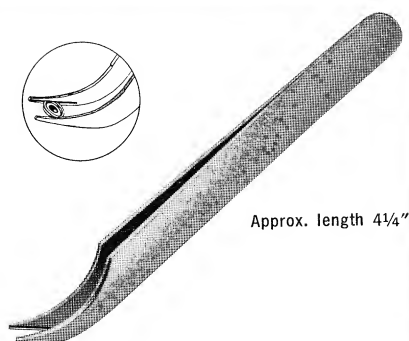
No.	Description	Set
47-805	115 Volt, 60 Cycle A.C. current	\$33.50



ACCESSORY SET

Contains 8 Neoprene vacuum cups which fit on probe tips to facilitate picking up larger objects. Diameters ¾" to ⅝" by 16ths. Comes in plastic box.

No.	Description	Set
47-808	Set of 8 Vacuum Cups	\$6.50



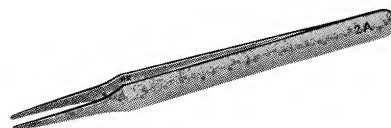
GROOVED TWEEZERS

The offset points are grooved on the inside to hold miniature jewel bearings and similar precision parts by their sides during special assembly operations.

No.	Metal	Each
47-393	Carbon Steel	\$2.80

SEMI-CONDUCTOR TWEEZERS

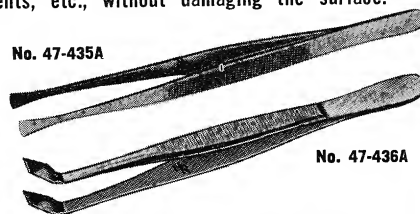
Have anti-acid properties and smooth large points for picking-up and holding the most delicate crystal growths, thin film components, etc., without damaging the surface.



PATTERN No. 2A

For use on the small pieces cut from silicon wafers and similar, delicate crystal growths. They have wide (.055"), round, perfectly matched tips, and are available in a choice of acid resistant, non-corrosive metals.

No.	Metal	Each
46-202A	Stainless Steel	\$3.40
46-352A	Non-Mag. Stainless	3.90
46-362A	Carpenter 20	4.40



PATTERN Nos. 35A and 36A

For handling the large wafer type crystal growths prior to cutting and forming. They have big, wide, ¼" convex points, that have been honed and finished to a knife edge so that they easily slide under thin, delicate parts or components without damage.

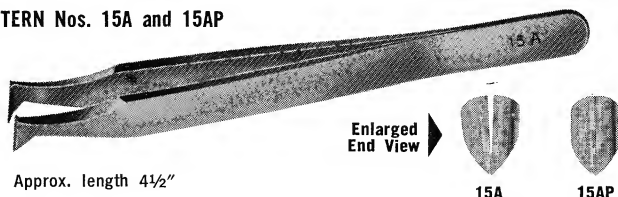
No.	Type	Metal	Each
47-435A	Straight	Non-Mag. Stainless	\$3.50
47-436A	Offset		3.50



SUPREME CUTTING TWEEZERS

For use on fine wires. Forged and tempered from a high grade tool steel with extensive hand operations used in shaping, adjusting and finishing the cutting edges.

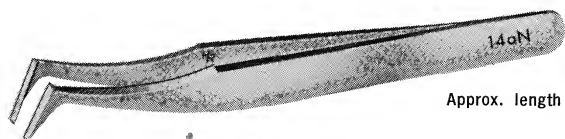
PATTERN Nos. 15A and 15AP



Approx. length 4 1/2"

Pattern No. 15A is the most popular wire cutting tweezer. It has a strong oblique cutting edge that gives crisp, clean, close cuts on many types of fine wire. Pattern No. 15AP is similar to it except that it has parallel cutting edges.

Pattern	Metal	No.	Each
15A	Carbon Steel	46-315A	\$7.50
15AP	Carbon Steel	46-315AP	7.50

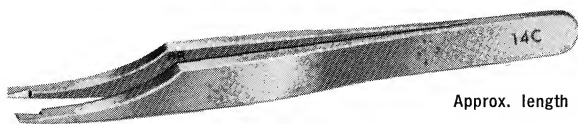


Approx. length 4 3/8"

PATTERN No. 14aN

For very soft wire, with hooked end for getting into very tight places.

Pattern	Metal	No.	Each
14aN	Carbon Steel	46-314aN	\$7.50

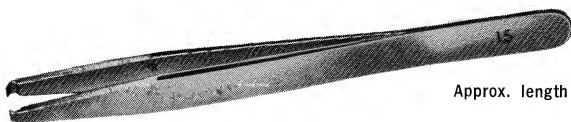


Approx. length 4 1/2"

PATTERN No. 14C

For very soft wire, the special end permits it to reach normally inaccessible places.

Pattern	Metal	No.	Each
14C	Carbon Steel	46-314C	\$5.60



Approx. length 4 1/4"

PATTERN No. 15

End cutter for very soft wire or for stripping fine magnet wire.

Pattern	Metal	No.	Each
15	Carbon Steel	46-315	\$5.35



CUTTING TWEEZER



Approx. length 3 3/4"

PATTERN No. D

For cutting very fine wires such as transistor inter-connections, filaments on miniature lamps, hairsprings, etc.

Pattern	Metal	No.	Each
D	Nickel Plated Steel	46-631	\$2.25



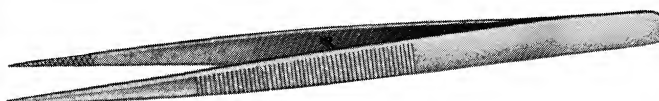
SERRATED TWEEZERS

Extra high quality West German made tweezers with finely serrated jaws that grip and hold even the most delicate objects securely without damage. Extensively used by jewelers for handling precious and semi-precious stones.



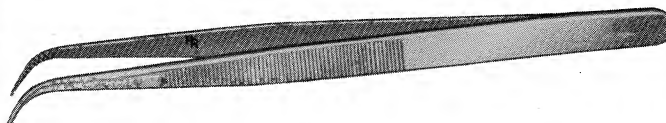
Smooth polished, Chromium plated steel tweezers, used in industry, laboratory research, etc., with serrated jaws and corrugated shanks that provide firm, non-slip gripping and holding. They are available in three different lengths and two tip sizes (medium and fine). Shanks are tapered, have beveled edges, and the points are hand finished.

No.	Points	Length	Price
47-514	Medium	5 1/2"	\$1.85
47-514 1/2	Fine	5 1/2"	1.85
47-515	Medium	6"	1.95
47-515 1/2	Fine	6"	1.95
47-516	Medium	6 3/8"	2.05
47-516 1/2	Fine	6 3/8"	2.05



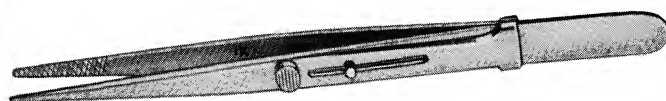
Slender tweezers with very fine, sharp, straight points and non-slip, serrated jaws. The slender shape makes them lighter in weight and gives better visibility in grasping, sorting and holding miniature items.

No.	Metal	Length	Price
47-614	Chromium Plated Steel	5 1/2"	\$2.15
47-634	Stainless Steel	5 1/2"	2.65
47-618	Chromium Plated Steel	4 3/8"	2.05
47-638	Stainless Steel	4 3/8"	2.55



Similar to the 47-614 etc., except the serrated jaws are curved which permits the user to work in awkward places and helps reduce operator fatigue on the assembly line because the hand can rest on the bench.

No.	Metal	Length	Price
47-616	Chromium Plated Steel	5 1/2"	\$2.35
47-636	Stainless Steel	5 1/2"	2.85
47-620	Chromium Plated Steel	4 3/8"	2.25
47-640	Stainless Steel	4 3/8"	2.75



Chromium plated steel tweezers with serrated jaws and sleeve locking device. Non-slip gripping because sliding button and opposite blade are corrugated. Shanks are tapered and have beveled edges; both medium and fine points are available.

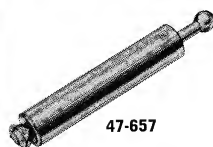
No.	Points	Length	Price
47-612	Medium	5 1/2"	\$2.85
47-613	Fine	5 1/2"	2.85

47-655



STONE HOLDERS

For gripping and holding small objects. Plunger in handle opens 3 prong wire jaw that withdraws back in handle when not in use. No. 47-655 has a pocket clip.



47-657

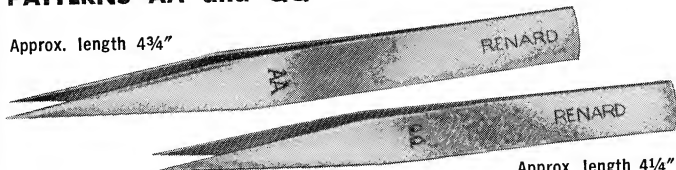
No.	O.L.	Price
47-655	4 3/4"	\$2.25
47-657	2"	1.95



The Renard or Boley Style Tweezers are excellent general utility tweezers made in Switzerland. All shanks are tapered, except the GG Pattern, and have beveled edges. The sharp points have received some finishing at the tips.

PATTERNS AA and QQ

Approx. length 4 3/4"



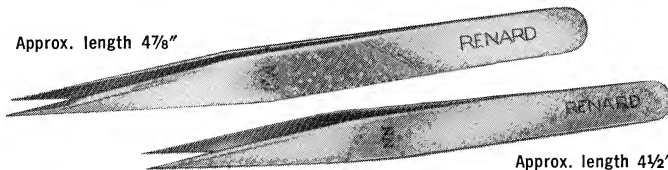
Approx. length 4 1/4"

For assembly, inspection, sorting, soldering, etc. of small parts and components. Pattern QQ is a small (4 1/4"), thinner version of Pattern AA. Solder will not adhere to No. 46-602B (Black Oxidized).

Pattern	Metal	No.	Price
AA	Nickel Plated Steel	46-602	\$1.20
AA	Black Oxidized	46-602B	1.20
AA	Carpenter 20	46-602C	2.45
AA	Stainless Steel	46-652	1.45
QQ	Nickel Plated Steel	46-622	1.10

PATTERNS MM and NN

Approx. length 4 7/8"



Approx. length 4 1/2"

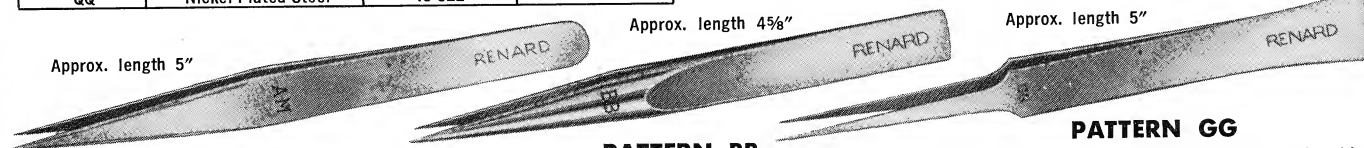
Similar to Patterns AA & QQ, but heavier. The shanks are slightly longer and the corner of the handle has been rounded. Pattern NN is the smaller version.

Pattern	Metal	No.	Price
MM	Nickel Plated Steel	46-613	\$1.30
MM	Stainless Steel	46-663	1.55
NN	Nickel Plated Steel	46-615	1.20

Approx. length 5"

Approx. length 4 5/8"

Approx. length 5"



PATTERN AM

Non-Magnetic brass version of Pattern MM. Excellent for handling parts that scratch easily.

Pattern	Metal	No.	Each
AM	Non-Mag. Brass	46-603	\$1.65

PATTERN BB

An extremely light tweezer with thin shanks that have been stamped into a convex shape.

Pattern	Metal	No.	Each
BB	Nickel Plated Steel	46-604	\$1.00

PATTERN GG

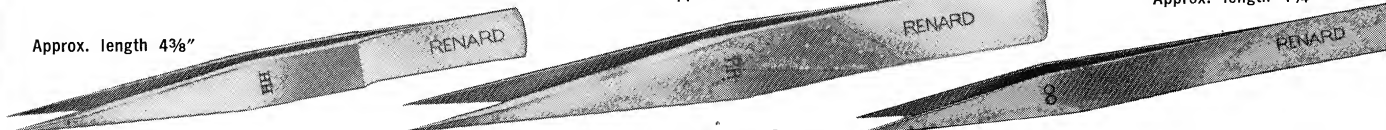
The indented shanks and finer points make this pattern suitable for handling small parts during production line operations.

Pattern	Metal	No.	Each
GG	Nickel Plated Steel	46-606	\$1.45
GG	Stainless Steel	46-656	1.70

Approx. length 4 3/8"

Approx. length 5 1/2"

Approx. length 4 3/4"



PATTERN HH

Thick strong shanks are the feature of this short tweezer.

Pattern	Metal	No.	Each
HH	Nickel Plated Steel	46-608	\$1.25

PATTERNS RR and LL

Hefty, heavy duty tweezers with wide shanks and points similar to those on Pattern AA. The shanks and handle of Pattern RR are extra thick. Pattern LL is a smaller (4 5/8") version.

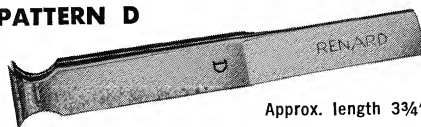
Pattern	Metal	No.	Each
RR	Nickel Plated Steel	46-624	\$1.95
LL	Nickel Plated Steel	46-611	1.15

PATTERNS OO and PP

Pattern OO is similar to Pattern AA in design, except for its thinner shanks and handle. Pattern PP is a shorter (4 1/4") version.

Pattern	Metal	No.	Each
OO	Nickel Plated Steel	46-617	\$1.20
PP	Nickel Plated Steel	46-619	1.10

PATTERN D

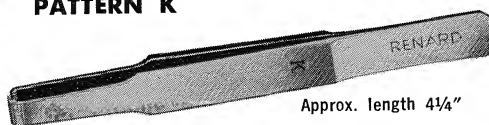


Approx. length 3 3/4"

For cutting very fine wires such as transistor inter-connections, filaments on miniature lamps, hairsprings, etc.

Pattern	Metal	No.	Price
D	Nickel Plated Steel	46-631	\$2.25

PATTERN K

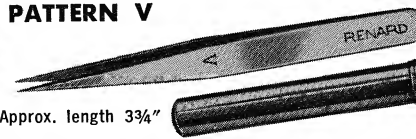


Approx. length 4 1/4"

Grooved jaws for grasping and removing small indicator hands from potentiometers, watches, etc.

Pattern	Metal	No.	Price
K	Nickel Plated Steel	46-633	\$2.45

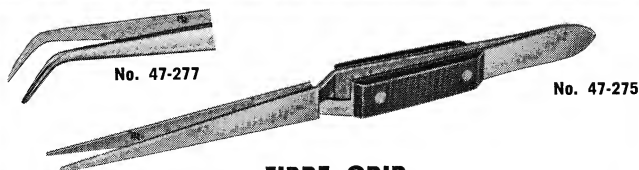
PATTERN V



Approx. length 3 3/4"

A very small tweezer with a plastic sheath to protect the points and permit the user to carry it in his pocket.

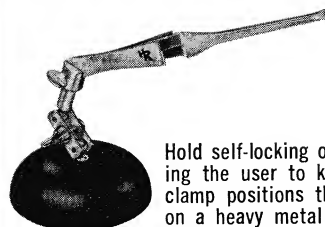
Pattern	Metal	No.	Price
V	Nickel Plated Steel	46-635	\$1.50



FIBRE GRIP

Have heat resistant fibre grips and self-locking jaws. The long tapered shanks have plain, blunt points.

No.	Type	Metal	Each
47-275	Straight	Polished Steel	\$2.50
47-277	Curved	Polished Steel	2.95



"THIRD HAND" SOLDERING STAND

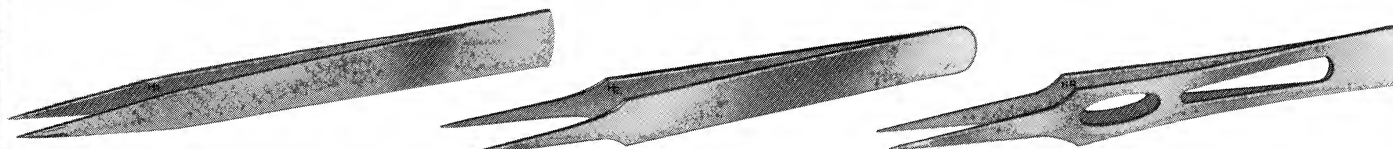
Hold self-locking or slide-locking tweezers securely allowing the user to keep both hands free. Swivel ball joint clamp positions the work at any angle and is mounted on a heavy metal base. Comes with self-locking tweezer.

No.	Tweezer Length	Price
42-404R	6 1/2"	\$3.20



Economical, imported and domestic, tweezers for soldering, holding, probing, sorting, etc.

Swiss Made — Thin tweezers made of various metals, with flat edge shanks, and points that have received some finishing.

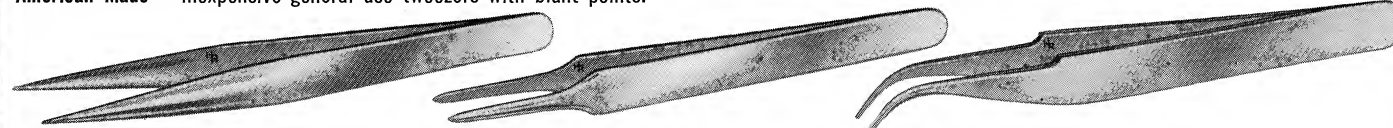


No.	Metal	Length	Each
47-003 1/2	Plain Steel	4 1/2"	\$0.40
47-009	Non-Mag. Brass	4 1/2"	.75
47-028	Nickel Plated Steel	4 1/2"	.60

No.	Metal	Length	Price
47-030	Nickel Plated Steel	4 1/2"	\$0.70

No.	Metal	Length	Price
47-010 1/2	Nickel Plated Steel	4 3/8"	\$0.80

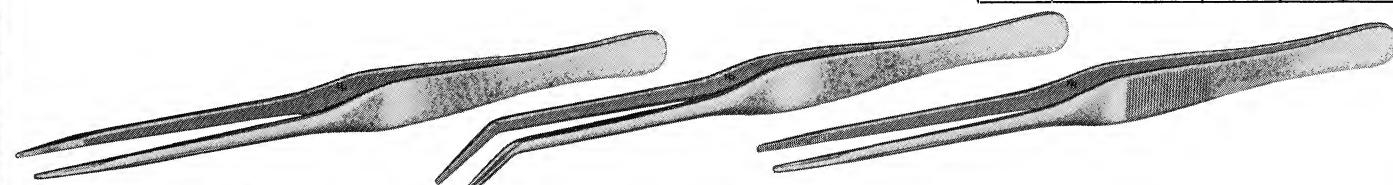
American Made — Inexpensive general use tweezers with blunt points.



No.	Metal	Length	Price
47-008	Nickel Plated Steel	4 1/2"	\$0.35

No.	Metal	Length	Price
47-010	Nickel Plated Steel	4 1/2"	\$0.50

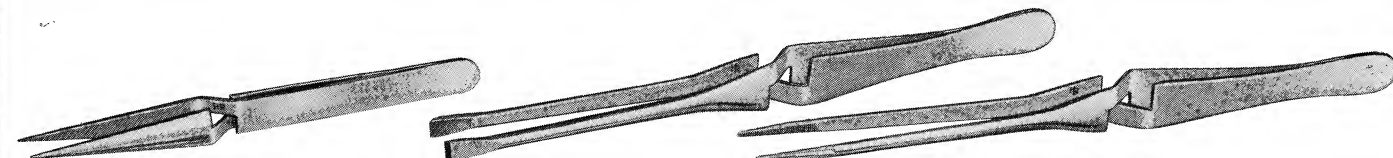
No.	Metal	Jaws	Length	Price
47-070	Nickel Plated Steel	Plain	4 1/2"	\$1.45
47-071	Nickel Plated Steel	Serrated	4 1/2"	1.45



No.	Metal	Length	Each
47-135	Nickel Plated Steel	7"	\$0.65

No.	Metal	Length	Each
47-136	Nickel Plated Steel	6 3/4"	\$0.65

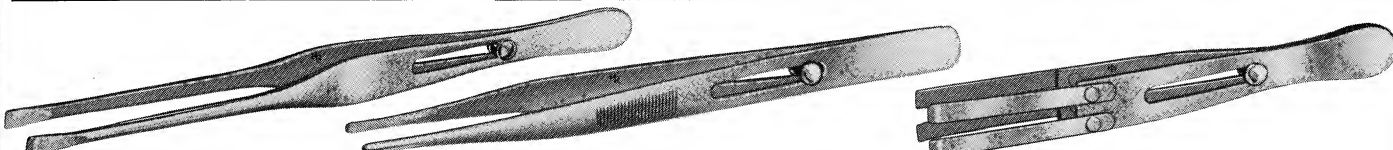
No.	Metal	Length	Each
47-279	Nickel Plated Steel	6 3/4"	\$0.80



No.	Metal	Length	Each
47-040	Nickel Plated Steel	4 5/8"	\$0.50

No.	Metal	Length	Each
47-045	Nickel Plated Steel	6 1/2"	\$0.65

No.	Metal	Length	Each
47-046	Nickel Plated Steel	6 3/4"	\$0.65

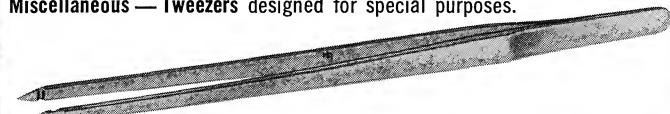


No.	Metal	Length	Each
47-053	Nickel Plated Steel	6 5/8"	\$0.75

No.	Metal	Length	Each
47-078	Nickel Plated Steel	6"	\$1.70

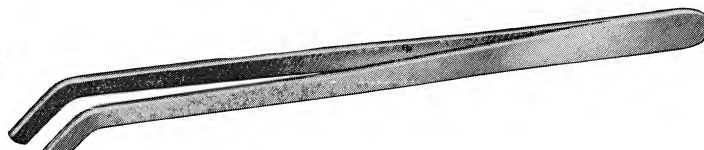
No.	Metal	Length	Each
47-276	Steel	4 1/2"	\$1.30

Miscellaneous — Tweezers designed for special purposes.



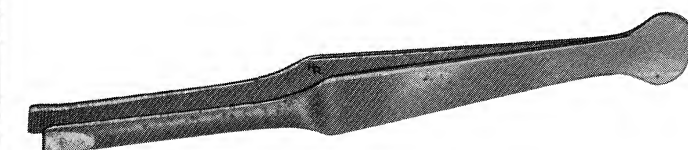
Perpendicular grooved jaws for holding miniature screws, clock and instruments pinions, etc. Long slim blades with sharp points.

No.	Metal	Length	Each
47-129	Nickel Plated Steel	6 3/4"	\$2.25



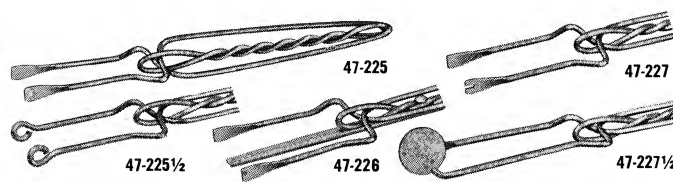
Copper tongs with curved tips for lifting objects from pickling and other acid type solutions.

No.	Metal	Length	Each
47-278	Copper	9"	\$2.25



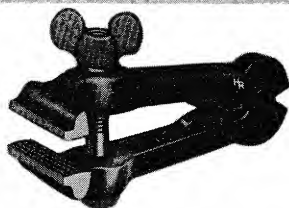
Plain forged steel soldering tweezers with blunt tips and corrugated jaws.

No	Metal	Tip Width	Length	Price
47-244	Steel	1/8"	4"	\$0.35
47-245	Steel	3/16"	5"	.40
47-246	Steel	3/16"	6"	.50
47-247	Steel	3/16"	7 1/4"	.60



Wire soldering tweezers with strong self-locking jaws. Length 5 1/2".

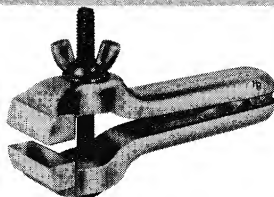
No.	Metal	Tip Style	Price
47-225	Steel	Flat 3/16" wide tips	\$0.65
47-225 1/2	Steel	Wire loops, 1/4" diameter	.65
47-226	Steel	Flat 3/16" wide tips with steadying table	.80
47-227	Steel	Flat 3/16" wide tips, one tip slotted	.65
47-227 1/2	Steel	3/16" diameter flat disc and right angled wire tip	.80



STEEL HAND VISE

Made of Swedish steel, with spring action handle and polished serrated jaws.

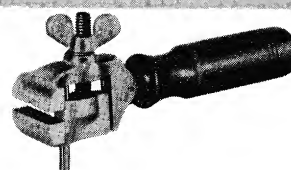
No.	O.L.	Jaw Dimensions		Each
		Opening	Width	
48-003	3 3/4"	7/16"	1 1/4"	\$3.95



ALUMINUM HAND VISE

Made of lightweight aluminum. Smooth jaws, spring action handle.

No.	O.L.	Jaw Dimensions		Each
		Opening	Width	
48-022	5 1/2"	3/4"	1 1/2"	\$4.95



WOOD HANDLE HAND VISE

Parallel action jaws provide a strong, powerful grip. Jaws are smooth and top has a V-groove in the center.

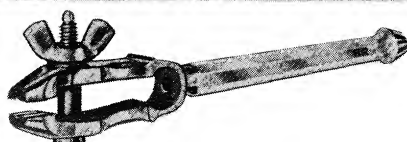
No.	O.L.	Jaw Dimensions		Each
		Opening	Width	
48-079	6 1/4"	5/8"	1 1/4"	\$1.35



LOWELL PATTERN HAND AND PIN VISES

Jaws are opened and closed by turning the hollow metal handle. No. 48-057 has serrated jaws while No. 48-156 has smooth jaws, both are V-grooved top and bottom.

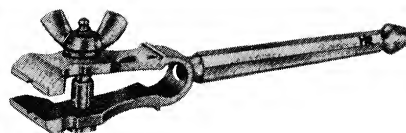
No.	O.L.	Jaw Dimensions		Each
		Opening	Width	
48-057	5 1/4"	5/16"	1/2"	\$3.95
48-156	4 1/4"	3/16"	1/4"	2.75



NARROW JAW WING NUT PIN VISE

Has grooved jaws... that are serrated... and hollow handle for gripping broaches, taps, wire, etc.

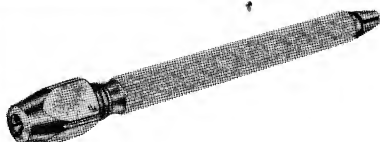
No.	O.L.	Jaw Dimensions		Price
		Opening	Width	
48-103	4 1/2"	1/4"	1/4"	\$2.25



WIDE JAW WING NUT PIN VISE

Has grooved jaws... that are serrated... and hollow handle for gripping broaches, taps, wire, etc.

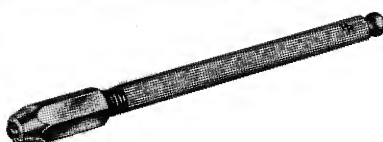
No.	O.L.	Jaw Dimensions		Price
		Opening	Width	
48-104	4 1/2"	1/4"	5/8"	\$2.25



SQUARE CHUCK PIN VISE

Has brass handle with two steel chucks, capacities 0 to 1.2 mm and 1.2 to 2.0 mm. Spare chuck is held in end of handle. Overall length 3 3/4".

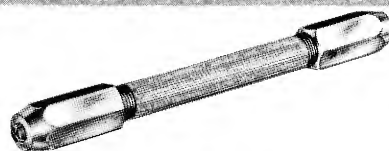
No.	O.L.	Capacity	Price
48-191	3 3/4"	0 to .079" (2.0mm)	\$0.85



REVERSIBLE CHUCK PIN VISES

Brass handles with double-end steel chucks and non-roll hexagonal heads.

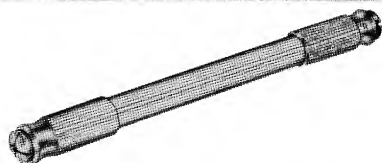
No.	O.L.	Capacity	Each
48-151	3 1/4"	0 to .059" (1.5mm)	\$0.90
48-152	3 1/4"	0 to .079" (2.0mm)	1.00



DOUBLE END PIN VISE

Nickel plated body with reversible steel chucks in both ends and non-rolling hexagonal heads. No. 48-153 is of domestic manufacture, while No. 48-153 1/2 is imported.

No.	O.L.	Capacity	Each
48-153	4 1/8"	0 to .118" (3.0mm)	\$1.35
48-153 1/2			1.15



DOUBLE END PIN VISE

Nickel plated body with steel chucks in both ends. One end has a small hole with a capacity of 0 to 1.5 mm; other end capacity 1.5 to 2.5 mm. Overall length 4 1/4".

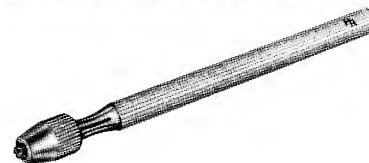
No.	O.L.	Capacity	Price
48-112	4 1/4"	0 to .099" (2.5mm)	\$1.00



HOLLOW STEEL PIN VISE

Very small hollow steel rod pin vise with knurled handle and screw chuck.

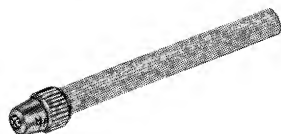
No.	O.L.	Capacity	Price
48-171	2 3/8"	0 to .032" (0.8mm)	\$0.50



HOLLOW BRASS PIN VISE

A hollow brass rod has been bonded to a hollow steel screw chuck.

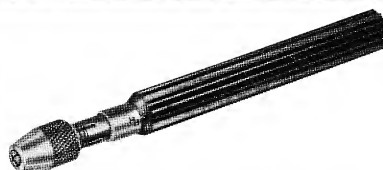
No.	O.L.	Capacity	Price
48-111	3 1/8"	0 to .028" (0.7mm)	\$0.60



BABY PIN VISE

Very small nickel plated hollow metal pin vise with screw chuck.

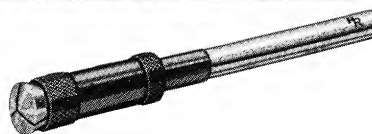
No.	O.L.	Capacity	Price
48-110	2"	0 to .020" (0.5mm)	\$0.40



WOOD HANDLE PIN VISES

Economical pin vises with black fluted wood handles and steel chucks.

No.	O.L.	Capacity	Price
48-143	3 1/2"	0 to .040" (1.00mm)	\$0.40
48-144	4"	0 to .047" (1.20mm)	.45
48-145	4 1/2"	0 to .059" (1.50mm)	.50



CHUCK HOLDING PIN VISE

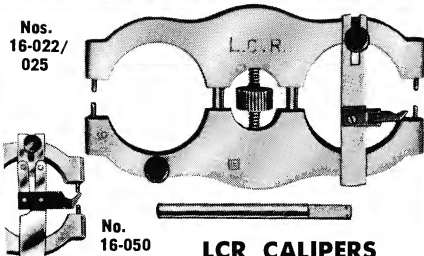
For holding "WW" Pattern wide lathe chucks Nos. 1 thru 80, so that all types of work, large and small, such as drilling and filing can be done.

No.	Length	Each
48-119	4"	\$3.00

See Page 57 for chuck sizes.

WATCH TOOLS

Nos.
16-022/
025

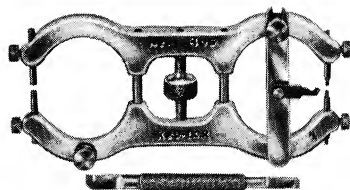


No.
16-050

LCR CALIPERS

For balance truing and poising. Parallel jaws are controlled by a finely threaded center screw. Calipers are nickel plated and come with truing wrench. No. 16-050 has patented guide and index which is always parallel to balance.

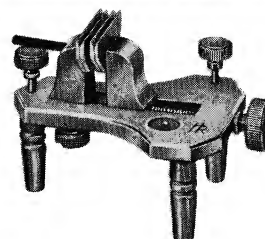
No.	Watch Size	Each
16-022	Bracelet and Pocket	\$8.95
16-025	Small Bracelet	8.95
16-050	Bracelet and Pocket	8.95



K&D CALIPERS

For balance truing and poising. Have heavy parallel guide pins and finely threaded center screw to assure parallel action of jaws. Points are properly tempered and shaped. Index is adjustable and easy to use. Chromium plated, with truing wrench.

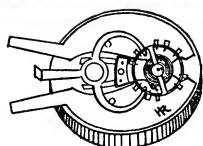
No.	Watch Size	Each
16-405	Regular Watches	\$8.95
16-406	Bracelet and Baguette	8.95



POISING TOOL

Precision ground red ruby jaws protected against chipping by nickel plated metal side guards. Levelness is checked by spirit level and adjustments made by two leveling screws. Nickel plated with vibrating screw. Maximum distance between jaws $\frac{3}{8}$ ".

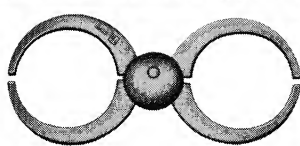
No.	Description	Each
38-398	In felt lined leatherette case	\$22.50



BALANCE BRIDGE TOOL

Helps align and hold screw holes when assembling parts on balance bridge. Also an aid in hairspring work when shaping, centering, leveling, etc.

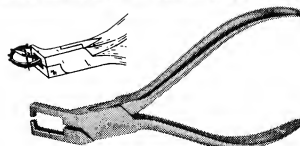
No.	Dia.	Each
11-055	1 $\frac{1}{4}$ "	\$4.50



BRASS CALIPERS

Double-ended so that comparative measurements can be made. Inexpensive, it can be adapted to other uses such as a proportional gauge.

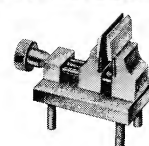
No.	Length	Each
16-001	4"	\$1.40



BALANCE PLIERS

For holding balance wheels on arms to avoid damage to wheel itself. Useful when working on balance screws.

No.	Length	Each
37-038	5"	\$3.95



POISING TOOL

Small inexpensive model with hardened steel jaws that will give excellent service on many jobs. Maximum distance between jaws $1\frac{1}{16}$ ".

No.	Each
38-303	\$4.00



BALANCE TWEEZERS

Genuine Dumont tweezers with specially designed tips for truing balance. Made of non-magnetic German Silver.

No.	Pattern	Length	Each
46-113	13	4 $\frac{3}{8}$ "	\$6.55



TEMPER REMOVER

Used for removing temper from balance staffs without discoloring wheel. Copper jaws open and close by turning handle.

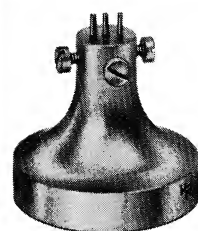
No.	Length	Each
45-102	4"	\$2.25



POISING SAW

Double edged sawblade, with tang for handle, that is used to enlarge or clear slots of miniature screw heads.

No.	Length	Each
40-070	3"	\$1.10

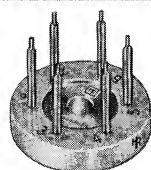


MARSH BALANCE SCREW UNDERCUTTERS

For removing weight from balance screws during truing and poising...cuts underneath head of screw. Comes complete with three cutters.

Replacement cutters
are available.

No.	Each
33-503	\$3.50

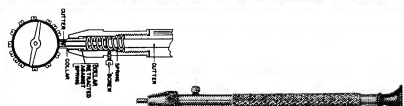


BALANCE SCREW UNDERCUTTERS

Set of six cutters for baguette to 18 size watches. Cuts underneath head of balance screw for truing and poising.

No.	Height	Set
33-518	1"	\$4.95

Replacement cutters are available.



K&D BALANCE SCREW CUTTERS

For truing, poising and regulating balance screws. Cuts notch in top of balance screw without removing screw from balance wheel. The set of six takes all sizes from baguette to 18 size. Retractable collar automatically centers cutter when in use.

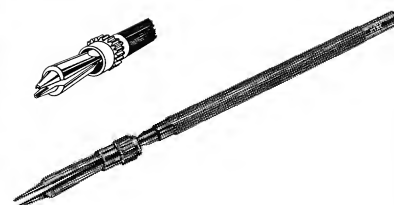
No.	Description	Set
33-525	Set of 6	\$7.15

K&D BALANCE SCREW HOLDER

For small precision screws such as those used on balance wheels. Has screwdriver blade in center of three pronged jaws which are opened and closed by pressing on swivel head. Chrome plated, knurled handle.



No.	Blade Size	Each
41-427	.027"	\$2.50
41-427A	.055"	2.75



BALANCE SCREW HOLDERS

Two pronged jaws hold miniature screw heads and other small parts firmly. Can be operated with one hand...chuck slides forward to lock jaws around object. Length 4".

SEPARATE SIZES

No.	Sizes	Each
41-451/1	0.20mm	\$1.60
41-451/2	0.25mm	
41-451/3	0.30mm	
41-451/4	0.40mm	
41-451/5	0.45mm	
41-451/6	0.50mm	
41-451/7	0.65mm	
41-451/8	0.75mm	

SET IN PLASTIC BOX

No.	Sizes	Set
41-450	1, 4 and 7	\$4.80



SEITZ PIVOT STRAIGHTENER

Bent pivots are straightened by turning gently in jeweled holes of succeeding smaller sizes until pivot is straight. Guide arm keeps balance flat. Holes graduated by 0.025mm.

No.	Description	Each
35-514	33 Jeweled Holes	\$12.60



PIVOT STRAIGHTENING TWEEZERS

For straightening pivots, needle point indicators, hands, etc. Blades are extra thick with blunt jaws that have beveled ends for better visibility.

No.	Description	Each
46-108	Genuine Dumont	\$6.95
46-208	Peer Stainless	5.45
46-308	Peer Supreme	4.95



EASY PIVOT POLISHER

For finishing and polishing pivots and other small parts. Rubber composition stick is loaded with diamond and is available in two lengths ... No. 35-302, the longer, is housed in a plastic magazine.

No.	Dimensions	Each
35-501	7/8" x 1/4"	\$0.15
35-502	5" x 5/16"	.60



PIVOT ROUNDER

A sapphire has been set in the end of the handle, and by placing a pivot in its hole and turning the tool to and fro the pivot will receive a nicely rounded end.

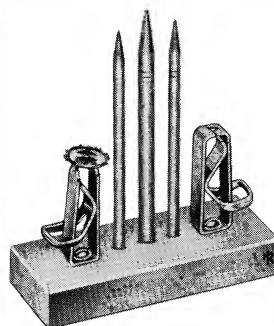
No.	Length	Each
35-530	2"	\$2.10



REX ROLLER REMOVER

Precision tool for removing all sizes and styles of rollers. Stumps are adjustable and so designed to supply a full flat bearing of the required strength to support roller, to prevent the buckling or breaking of table when handling staffs with thin heads or magnetic rollers. Stumps are shaped to fit between roller and hub of staff, and are opened and closed by turning the table which fits into hole in staking tool die plate or bench block. Set contains 3 Cross Hole Punches, 4 Stumps, Stump Holding Table and 2 Pinion Wrenches in hardwood box.

No.	Sizes	Set
39-505 1/2	Baguette to 18S	\$9.75



K&D DUPLEX ROLLER REMOVER

A fast working tool for driving out staffs through roller. The two spring action clamps mounted on the metal base will take all sizes of rollers. Set comes with three Cross Hole Punches of different sizes. Both the spring clamps and punches have been carefully tempered to provide good service.

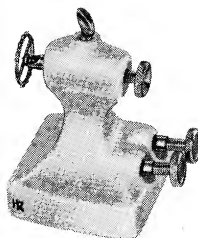
No.	Description	Set
39-529	For all sizes of Rollers	\$6.50



PRECISION ROLLER REMOVER

Only slight pressure of jaws is necessary to lift roller from balance seat. This one-piece tool is made of tempered steel with a plated finish. It operates on the seat of the staff between balance wheel hub and roller. Jaws are extra fine and can be used for rollers of any size. Comes in plastic case.

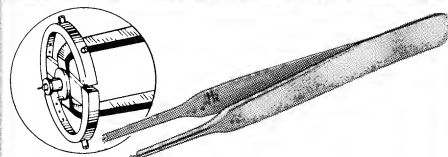
No.	Length	Each
39-530	2 3/4"	\$1.95



K&D YANKEE ROLLER REMOVER

Removes rollers by screw pressure without danger of distortion or damage to balance. Comes with three color coded sets of jaws that will fit under any size or style of roller.

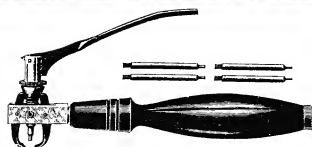
No.	Height	Set
39-532	2 1/4"	\$8.50



ROLLER REMOVING TWEEZERS

Jaws are sharp and strong to fit between roller table and balance wheel arms. Just press the blades together and roller is loosened. Made of nickel plated steel.

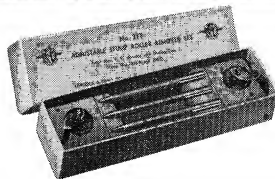
No.	Length	Each
47-397	3 3/4"	\$2.25



ROLLER AND HAND REMOVER

Pushing plunger down forces off roller or hand. Jaws are adjustable and always keep the pusher centered. Comes with four pushers with holes to fit over pivots and one plain for hands. Hollow handle stores extra pushers.

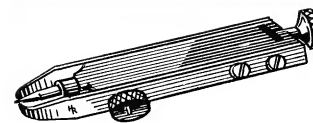
No.	Length	Set
39-520	4 1/2"	\$12.00



K&D ROLLER REMOVERS

For use in staking tool or Jiffy Stump Block. Bent arm fits nearest die hole preventing stump from rotating. Jaws are adjusted for gap by means of knurled collar.

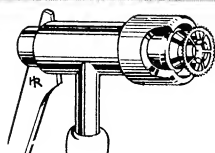
No.	Description	Set
39-517	2 Stumps, 3 Punches	\$5.00



KAY ROLLER REMOVER

Removes rollers by screw pressure. Jaws can be adjusted to various sizes of rollers by use of a thumb screw.

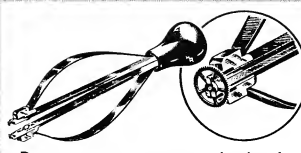
No.	Sizes	Each
39-503	Bracelet Watches	\$3.75



SWEEP WHEEL REMOVER

Five pronged jaws fit around the spokes of sweep second wheel. Jaws are grooved to grasp wheels firmly, and are lever operated. Will not break or bend the pivot.

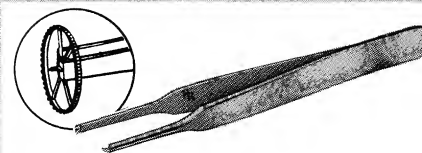
No.	Description	Each
39-423	For Bracelet Watches	\$5.80



PRESTO SWEEP WHEEL REMOVER

Removes sweep second wheels without danger of breaking or bending the pinion. No. 39-403 is suitable for most sizes of sweep wheels. No. 39-403A removes six spoke wheels of chronographs and watches with long sweep second hands.

No.	Description	Each
39-403	5 Spoke Wheels	\$5.00
39-403A	6 Spoke Wheels	5.00

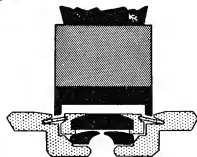
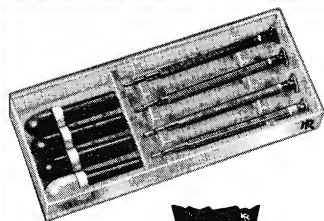


SWEEP SECOND WHEEL REMOVING TWEEZERS

One jaw has two prongs and the other one so that sweep second wheels can be grasped and pulled without damage to the pinion.

No.	Length	Each
47-395	4 1/4"	\$2.50

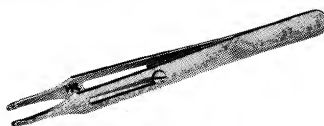
SHOCK-ABSORBER TOOLS



SPRING REMOVERS AND INSERTERS

Screwdriver type tool depresses spring so that it can be rotated for removal and insertion. Plastic points will not mar spring. Set of 4 (sizes 1.2 to 2.0mm) fit KIF, Ruby Shock, Monorex, Resomatic, Contrachoc, Junghans, etc., shock proofing devices. Set comes with extra points.

No.	Description	Set
39-461	In Plastic Case	\$5.95



INCABLOC TWEezer

A Genuine Dumont Tweezer (Pattern No. 27) with specially designed tips and slide lock for holding Incabloc settings.

No.	Length	Each
46-127	4 1/4"	\$7.50

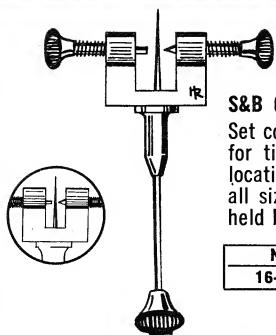


KIF SPRING REMOVERS AND INSERTERS

Set of 4 tools that can be used to depress the spring so that it can be rotated for removal and insertion. Fits sizes: 1.30mm, 1.60mm, 1.90 mm and 2.10mm.

No.	Description	Set
39-462	In Plastic Box	\$1.40

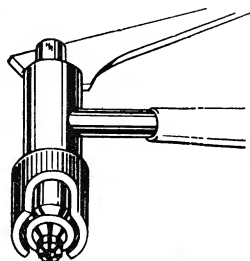
CANNON PINION TOOLS



S&B CANNON PINION AND ROLLER TIGHTENER

Set contains two screw anvils and two punches for tightening cannon pinions and rollers. Its locating pin is hardened and tapered to hold all sizes of cannon pinions and rollers, and is held by a split sleeve in the frame.

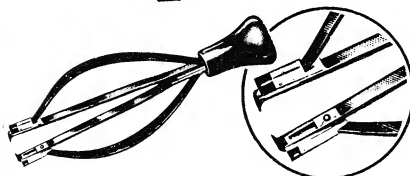
No.	Description	Set
16-531	With 2 Punches & 2 Stumps	\$4.95



M-C CANNON PINION REMOVER

Has vise like jaws that grasp cannon pinion and pull up when lever is pushed. Fibre base protects movements. Jaws are divided into six parts for firm grip, and fit all sizes.

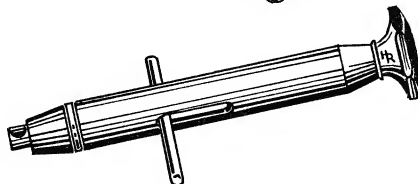
No.	Length	Each
39-205	5"	\$4.90



PRESTO CANNON PINION REMOVER

For removing all sizes of cannon pinions, as well as hands for large watches. Has fibre pushers to prevent marring.

No.	Jaw Opening	Each
39-202	3/16"	\$4.70



CANNON PINION REMOVER

Tapered slot in jaw fits over any size cannon pinion. By pulling on extended arms, jaws pull up into body of tool pulling cannon pinion off center wheel post.

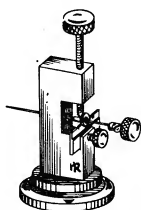
No.	Description	Each
39-224	Has Spring in Handle	\$3.00



ELECTRIC WATCH CANNON PINION TWEezer

Has specially designed points for seating the cannon pinion in the Hamilton Electric Watch.

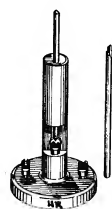
No.	Length	Each
47-396	4 1/4"	\$3.95



CANNON PINION TIGHTENER

The cannon pinion is placed on a needle which is put in one of the three grooves of the adjustable stump. The threaded punch is screwed down on the cannon pinion indenting the shaft to the required degree.

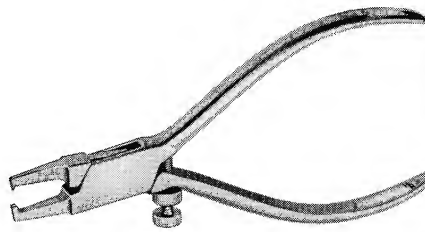
No.	Height	Set
16-504	2"	\$2.75



CANNON PINION TIGHTENER

Cannon pinion is clamped between stump and punch and tightened by tapping punch. Can also be used for stretching guard pins. Comes with 2 punches and 3 stumps.

No.	Height	Set
16-502	2 1/4"	\$2.25



CANNON PINION AND ROLLER TIGHTENING PLIERS

Slot holds either cannon pinion or roller while pointed jaw makes dent. Stop screw prevents closing jaws too tightly.

No.	Length	Each
37-069	5"	\$5.50



ELECTRIC CONTACT TWEezERS

Genuine Peer Tweezers for removing burrs, oxidation, etc. from the contact surfaces of relays, switches and other contact surfaces found in electric watches.

No.	Length	Metal	Each
47-394	4 3/4"	Stainless Steel	\$4.25

X-REFERENCE . . . Watch Tools

Case Tools	20 & 21	Movement Holders	61
Demagnetizers	27	Oils and Oilers	62 to 65
Eye Loupes	32 to 33	Pliers and Nippers	68 to 78
Gauges	42 to 44	Pivot Files & Burnishers	16
Hairspring Tools	47	Screwdrivers	89 to 92
Hammers & Mallets	48	Screw Taps & Dies	94-95
Hand Removers	83	Soldering	98 to 101
Jeweling Tools	50-51	Staking Tools	102 to 105
Keys	52	Testing Equipment	109
Lathes	54 to 59	Tweezers	110 to 117
Mainspring Tools	60	Vises	118-119



PALLET FORK AND ARBOR TOOL

Holds pallet fork securely when replacing arbor, guard pin, etc. Slide lock closes jaws.

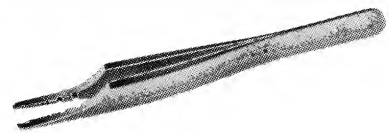
No.	Length	Each
35-010	4"	\$1.95



PALLET FORK AND ARBOR TWEEZERS

Genuine Dumont Tweezers with specially designed tips, and slide lock, for holding pallet forks securely when replacing arbor, guard pin, etc.

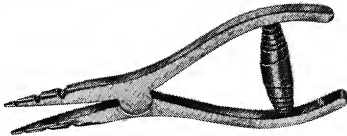
No.	Length	Description	Each
46-123B	4 1/4"	Regular Size	\$7.50
46-125B	4 1/4"	Small Size	7.50



HAND TWEEZERS

Genuine Dumont Tweezers with specially designed tips for removing and holding second hands. Tips have fine cutting edge for hair-springs, pins, etc.

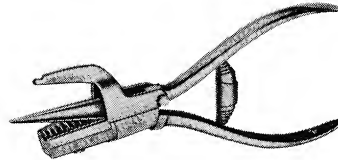
No.	Length	Description	Each
46-114	4 3/8"	Regular	\$12.35
46-114A	4 7/8"	With Slide Lock	12.35



BOW OPENING PLIERS

For removing pendant bows; expanding and opening links and rings. Has spring in handle which keeps pliers closed. Jaws open when handles are compressed.

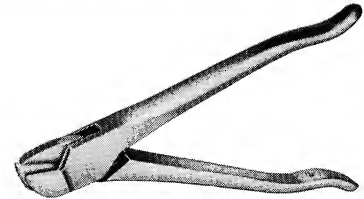
No.	Length	Each
37-001 1/2	5 1/2"	\$3.75



BOW OPENING AND CLOSING PLIERS

Opens and closes pendant bows, links, etc. Brass jaws prevent marring.

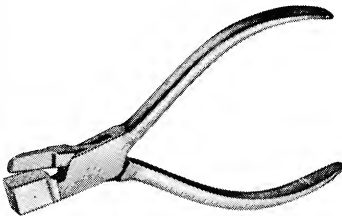
No.	Length	Each
37-003	6 1/2"	\$6.60



BOW CLOSING PLIERS

For closing pendant bows and loops; and for bending rings.

No.	Length	Metal	Each
37-004	6"	Polished	\$3.75



BOW CLOSING PLIERS

A light weight plier for closing small bows and loops. Brass jaw prevents marring.

No.	Length	Each
37-008	5"	\$4.15

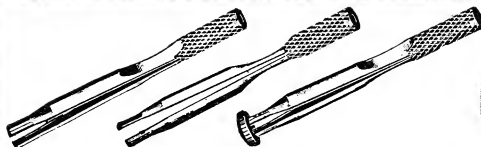
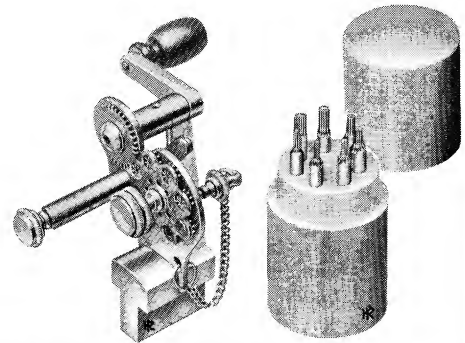
PENDANT BOW MILLERS

For cutting bow ends to fit pendant. Comes complete with cutters packed in a hardwood case.

No.	Description	Set
33-108	Complete as described	\$21.25

ACCESSORIES

No.	Description	Set
33-108A	Set of 7 Millers	\$5.75
33-108B	Set of Cutting Wheels	5.75

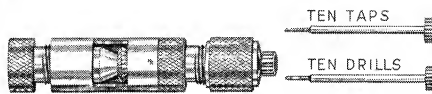


CROWN REAMERS

For use on fancy, pocket and antique crowns where obtaining exact crown may be difficult. Spring action presses cutting edges against sides of crown opening so that it can be enlarged by rotating crown. Set of 3.

No.	Description	Set
17-618	For 0 to 18S Watches	\$5.95
17-619	For Bracelet Watches	5.95

CROWN TOOLS



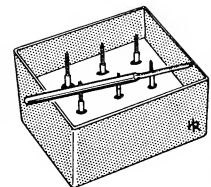
CROWN TAP AND DRILL SET

Crowns are held firmly centered in holder so that drill and tap can be run through holder directly into crown post. Ten different drills and taps supplied with set which comes in a plastic case.

No.	Description	Set
17-630	Complete as described	\$8.25

CROWN TAPS

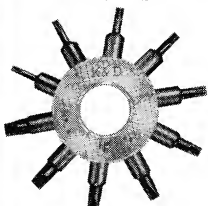
Set of 6 popular taps for rethreading crowns. Saves crowns with damaged threads, and enables you to enlarge the tap size for larger stems.



No.	Description	Set
17-621	Set of 6	\$2.40

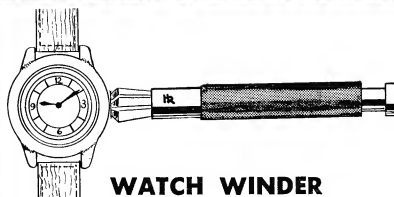
K&D SLEEVE WRENCH

Federal Stock No. 5120-329-3345



With ten bits to serve both bracelet and pocket watches. Bits are carefully formed and electrically tempered for strength and toughness.

No.	Dia.	Each
49-545	2 1/4"	\$3.30



WATCH WINDER

Saves your fingers, winds wrist watches with the smallest crowns. Jaws are opened and closed by pushing on plunger handle.

No.	Length	Each
49-059	3"	\$2.30

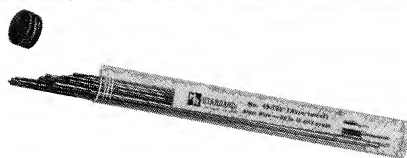


PRESTO CROWN & SNAP POST REMOVER

Removes crown and snap post from cases with this feature without damaging the case and tube. Can also be used to remove hands and setting knobs on alarm and desk clocks.

No.	Length	Each
39-419	3 3/4"	\$4.70

WIRE



WIRE IN PLASTIC TUBES

Six inch lengths in assorted sizes from 20 to 70 by drill gauge.

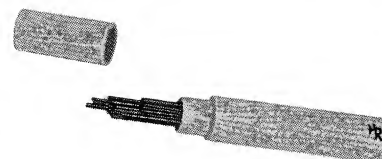
No.	Metal	Set
49-100	Brass	\$1.95
49-101	Steel	2.75
49-102	German Silver	2.35



BRASS BUSHING WIRE

Three inch lengths of seamless brass bushing wire of varying diameters with various hole sizes. Used for joints, clock bushings, etc. Packed in a plastic tube.

No.	Description	Set
49-103	Dozen Assorted Pieces	\$1.30



BALANCE STAFF AND PIVOT WIRE

Three inch lengths of blue tempered steel wire in assorted sizes from 46 to 74 by drill gauge.

No.	Description	Set
46-106	In Wooden Tube	\$1.10



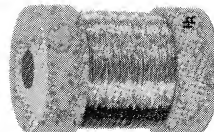
RIVET WIRE

Six inch lengths in assorted sizes from 14 to 21 by B&S gauge (.030" to .069"). Packed by dozen in envelopes.

No.	Metal	Set
49-150	Brass	\$0.35
49-152	German Silver	.45

BRASS SPRING WIRE

Supplied in one ounce spools with sizes by B&S wire gauge.



No.	Size	Spool
49-275	22	\$1.00
	24	1.00
	26	1.10
	28	1.20
	30	1.40
	32	1.50

Specify Order No. and Size when ordering.



DRILL ROD

Supplied in one foot lengths.

No.	Sizes
ROUND	
49-300	Drill Gauge 1 to 70
SQUARE	
49-350	$\frac{1}{16}$ ", $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ", $\frac{7}{32}$ " and $\frac{1}{4}$ "
FLAT . . . thickness $\frac{1}{16}$"	
49-370	$\frac{1}{16}$ ", $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ "

Specify Order No. and Size when ordering.



IRON BINDING WIRE

For holding parts that are to be soldered or cemented together. Also for stringing objects that are to be dipped in plating solutions and cleaners. Supplied in $\frac{1}{4}$ pound spools.

No.	Size		Spool
	No.	Inch	
49-210	12	.020"	\$0.50
	14	.018"	
	16	.016"	
	18	.014"	
	20	.0125"	
	22	.011"	
	24	.010"	.60
	26	.009"	
	28	.008"	
	30	.007"	
	32	.0065"	

Specify Order No. and Size when ordering.



PEERLESS TENSION SPRING WIRE

For making watch springs, loupe springs, and various other uses. Made of a high quality tension steel spring wire that has been pre-tempered and will not break or set in use. Packaged in 3 foot coils.

ROUND

All sizes from 15 to 40 (B&S Wire Gauge).

No.	Sizes	Coil
49-265	15	\$0.50
	16 to 40	.40

Specify Order No. and Size when ordering.

FLAT

No.	Width	Thickness	Coil
49-270	.008"	.016"	\$0.40
		.020"	
		.024"	
		.016"	
	.010"	.020"	
		.024"	
		.020"	
		.024"	
	.012"	.024"	
		.028"	
		.024"	
		.024"	

Specify Order No., Width and Thickness, when ordering.



WIRE BENDER

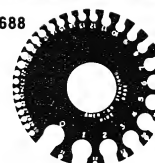
End is slotted for shaping or bending wire. Has wood handle.

No.	Length	Each
49-099	6 $\frac{1}{4}$ "	\$1.25

No. 24-680



No. 24-688



WIRE & METAL PLATE GAUGES

Rectangular Stubs pattern drill gauge measures sizes 1 thru 80. The circular B&S gauge can be used to measure both wire and metal plate, and has decimal equivalents on the back.

No.	Description	Each
24-680	Stubs Gauge	\$6.75
24-688	B&S Gauge	5.25

SCIENCE OF WATCH REPAIR SIMPLIFIED

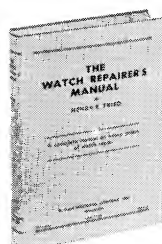


by A. Gideon Thisell

This book analyzes the watch movement and escapement. Avoids technical terms and is written in easy-to-understand language. Practical information on watch repair and especially needed chapters on the use of the timing machine and how to analyze errors.

No.	Pages	Each
58-543	200	\$1.98

THE WATCH REPAIRER'S MANUAL



by Henry B. Fried

This complete up to date book covers practically all phases of watch repair. Special section on trouble shooting makes this book doubly valuable. Written by one of the foremost authorities in the field today.

No.	Pages	Each
58-546	307	\$7.00

A PRACTICAL COURSE IN HOROLOGY

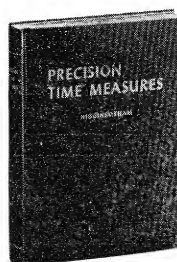


by Harold C. Kelly

An enlightening book on the subject of watch construction, repair, and adjustment. Point by point operations are illustrated making it valuable for both the repairman as well as the beginner.

No.	Pages	Each
58-553	192	\$5.25

PRECISION TIME MEASURES

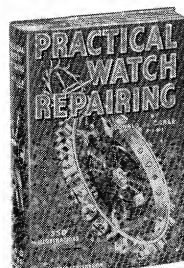


by Charles T. Higginbotham

While some processes described in this book are now mainly of historical value and interest, they may still be used. It is a fine reference for those who have ceased to need instruction as well as serviceable to the youngest member of the trade.

No.	Pages	Each
58-556	345	\$4.50

PRACTICAL WATCH REPAIRING

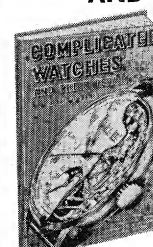


by Donald de Carle, F.B.H.I.

This book contains 550 illustrations describing the theories and processes of repairing and adjusting the modern watch precisely and with meticulous detail.

No.	Pages	Each
58-557	299	\$7.50

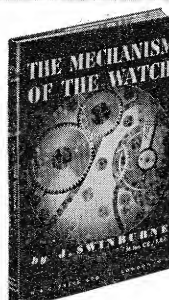
COMPLICATED WATCHES AND THEIR REPAIR



by Donald de Carle

Deals with complicated work essentially from the repairer's point of view, from the relatively simple automatic to the triple complicated watch with chronograph, calendar and repeater work, and the very complicated clock watch. 217 illustrations, hard cover.

No.	Pages	Each
58-559	174	\$9.00



THE MECHANISM OF THE WATCH

by J. Swinburne, M. Inst. C.E., F.R.S.

A collection of critical notes on the technology of the watch. It is a theoretician's view of the complex science of horology.

No.	Pages	Each
58-561	88	\$2.50

PRACTICAL WATCH ADJUSTING AND SPRINGING

by Donald de Carle, F.B.H.I.

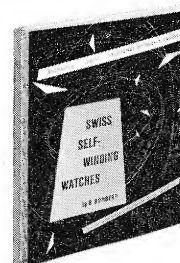


Describes and illustrates in detail...including the systems employed by the most successful timers working in the Swiss watch factories...various methods for adjusting the hairspring and balance wheel so that the watch will keep time in various positions and during change in temperature... 190 illustrations.

No.	Pages	Each
58-571	156	\$5.70

SWISS SELF-WINDING WATCHES

by B. Humbert



Fully detailed illustrations and specific instructions for the disassembly of every important make of self-winding watch. Each individually treated and pictorially explained in the fine Swiss tradition.

No.	Pages	Each
58-565	217	\$8.00

THE WATCHMAKER'S LATHE



by Ward Goodrich

An excellent book on the use of the American lathe and its attachments. The book covers the history of the lathe, construction, chucks, cutters and other important subjects that are both useful and informative.

No.	Pages	Each
58-555	264	\$4.50

THE WATCHMAKER'S LATHE AND HOW TO USE IT



by Donald de Carle, F.B.H.I.

A complete and unbiased review of all the lathes and their tools known to be in production at the time of publication. Completely detailed with 210 instructional illustrations.

No.	Pages	Each
58-568	154	\$9.00

WATCH & CLOCK ENCYCLOPEDIA

by Donald de Carle, F.B.H.I.

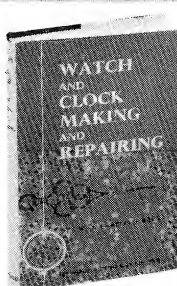


Contains over 3,000 definitions of the correct names of materials, tools, instruments, processes and how to use them in a clear and concise language. 1,300 illustrations help with the explanation.

No.	Pages	Each
58-569	307	\$10.75

WATCH AND CLOCK MAKING AND REPAIRING

by W. J. Gazeley, F.B.H.I.



Deals with the construction and repair of the various types of movements, trains, motion work and gearing, escapements, keyless mechanisms, balances and balance springs, pendulums, etc. of watches, clocks and chronometers. 410 pages, over 300 illustrations including designs of special tools.

No.	Pages	Each
58-527	410	\$10.00

CLOCK AND WATCH ESCAPEMENTS

by W. J. Gazeley, F.B.H.I.



The most comprehensive treatment of escapements ever published. Not only does it list all the modern mass-produced types but it contains the only good source of information and detailed descriptions of old escapements and their faults. With special chapters on Polishing and the Deepening Tool. 290 pages, 192 illustrations.

No.	Pages	Each
58-525	290	\$7.50

WATCHMAKERS AND CLOCKMAKERS OF THE WORLD

by G. H. Baillie



36,000 names of Watchmakers and Clockmakers throughout the World, with localities and dates from the earliest records of the 14th century to 1825. Included are initials, monograms, alternate spellings and abbreviations.

No.	Pages	Each
58-560	388	\$9.00

PRACTICAL CLOCK REPAIRING



by Donald de Carle,
F.B.H.I.

Deals with the usual faults likely to develop in each type of movement in general use, from the Grandfather to the Alarm. All tools and equipment are described and illustrated together with the ways of using them. 400 illustrations, hard cover.

No.	Pages	Each
58-558	240	\$7.50

THE MODERN CLOCK

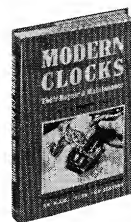


by Ward L. Goodrich

One of the most complete books on clock repair. Included are not only historical clocks, but also cuckoo clocks, present day clocks and electric clocks. Included are tips on refinishing and restoring old cases.

No.	Pages	Each
58-554	502	\$4.95

MODERN CLOCKS Their Repair & Maintenance



by T. R. Robinson

Describes the mechanisms of every kind of clock device used from chime correctors to detachable barrels and synchronous motors. Over 300 illustrations provide accurate descriptions of the different functions and aid in repair.

No.	Pages	Each
58-562	289	\$7.50

THE HOROLOVAR 400-DAY CLOCK REPAIR GUIDE



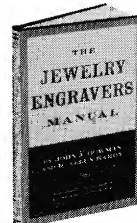
by Charles Terwilliger

5th EDITION

Keep your repair time to a minimum with this new 167 page enlarged edition. Contains illustrations of over 350 "Back Plate" markings to aid you in identifying the manufacturer and the correct pendulum suspension spring.

No.	Pages	Each
58-526	167	\$4.95

THE JEWELRY ENGRAVERS MANUAL



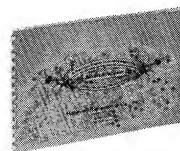
by John J. Bowman
and R. Allen Hardy

Clear step-by-step instructions on how to do jewelry engraving. Each chapter on the various initials and monograms shows how they should be drawn, what tools are needed and the direction and number of cuts. 139 pages, 88 illustrations.

No.	Pages	Each
58-534	139	\$4.95

A PRACTICAL COURSE IN JEWELRY ENGRAVING

by Albert A. Winter



Soft cover book contains designs, monograms, lettering, instructions and engravers tools. Useful for both the beginner and the most experienced craftsman.

No.	Pages	Each
58-523	64	\$3.50

ENGRAVING ON PRECIOUS METALS

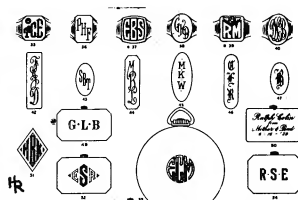


by A. Brittain,
S. Wolpert and P. Morton

For professionals and others who wish to learn hand engraving. Contains sections on engraving letters, monograms, name plates, ornaments, ivory and other materials, inlay and machine engraving.

No.	Pages	Each
58-566	228	\$6.25

BENSON ENGRAVING CHART



Over 55 styles of beautiful lettering, monograms and initials that can be used as models for engraving jewelry and precious metals.

No.	Description	Each
58-524	55 Styles	\$0.25

THE JEWELRY REPAIR MANUAL



by R. Allen Hardy and John J. Bowman

Gives special emphasis to methods and procedures... what tools to use... how to hold them, just how it is done... rather than principles and theory. Enables the beginner to become a successful jewelry repairman. 157 pages, 195 illustrations.

No.	Pages	Each
58-520	157	\$4.85

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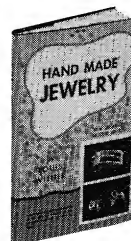


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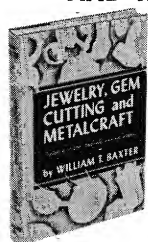


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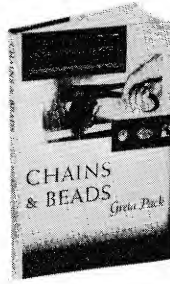


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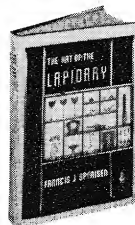


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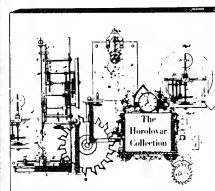


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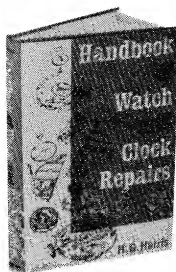


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INCH	M/M	B&S GAUGE	STUBS STEEL WIRE	DRILL NO.	INCH	M/M	B&S GAUGE	STUBS STEEL WIRE	DRILL NO.	INCH	M/M	B&S GAUGE	STUBS STEEL WIRE	DRILL NO.
.0030	0.076	—	—	—	.0403	1.024	18	—	—	.1200	3.048	—	31	31
.0040	0.102	—	—	—	.0410	1.041	—	58	59	.1270	3.226	—	30	—
.0050	0.127	—	—	—	.0420	1.067	—	57	58	.1285	3.264	8	—	30
.0059	0.150	—	—	97	.0430	1.092	—	—	57	.1340	3.404	—	29	—
.0060	0.152	—	—	—	.0450	1.143	—	56	—	.1360	3.454	—	—	29
.0063	0.160	—	—	96	.0453	1.151	17	—	—	.1390	3.531	—	28	—
.0067	0.170	—	—	95	.0465	1.181	—	—	56	.1405	3.573	—	—	28
.0070	0.178	—	—	—	.0500	1.270	—	55	—	.1430	3.636	—	27	—
.0071	0.180	—	—	94	.0508	1.290	16	—	—	.1440	3.662	—	—	27
.0075	0.190	—	—	93	.0520	1.321	—	—	55	.1443	3.670	7	—	—
.0790	0.200	—	—	92	.0550	1.397	—	54	54	.1460	3.712	—	26	—
.0080	0.203	—	—	—	.0571	1.450	15	—	—	.1470	3.758	—	—	26
.0083	0.210	—	—	91	.0580	1.473	—	53	—	.1480	3.763	—	25	—
.0087	0.220	—	—	90	.0595	1.512	—	—	53	.1495	3.802	—	—	25
.0090	0.229	—	—	—	.0630	1.600	—	52	—	.1510	3.835	—	24	—
.0091	0.230	—	—	89	.0635	1.613	—	—	52	.1520	3.861	—	—	24
.0095	0.241	—	—	88	.0641	1.629	14	—	—	.1530	3.886	—	23	—
.0100	0.254	—	—	87	.0660	1.676	—	51	—	.1540	3.912	—	—	23
.0105	0.267	—	—	86	.0670	1.702	—	—	51	.1550	3.937	—	22	—
.0110	0.279	—	—	85	.0690	1.753	—	50	—	.1570	3.988	—	21	22
.0115	0.292	—	—	84	.0700	1.778	—	—	50	.1590	4.039	—	—	21
.0120	0.305	—	—	83	.0720	1.829	13	49	—	.1610	4.085	—	20	20
.0125	0.320	—	—	82	.0730	1.854	—	—	49	.1620	4.111	6	—	—
.0130	0.330	—	80	81	.0750	1.905	—	48	—	.1640	4.162	—	19	—
.0135	0.343	—	—	80	.0760	1.930	—	—	48	.1660	4.212	—	—	19
.0140	0.356	—	79	—	.0770	1.956	—	47	—	.1680	4.263	—	18	—
.0142	0.361	27	—	—	.0785	1.994	—	—	47	.1695	4.302	—	—	18
.0145	0.369	—	—	79	.0790	2.007	—	46	—	.1720	4.371	—	17	—
.0150	0.381	—	78	—	.0808	2.052	12	—	—	.1730	4.396	—	—	17
.0159	0.404	26	—	—	.0810	2.057	—	45	46	.1750	4.447	—	16	—
.0160	0.406	—	77	78	.0820	2.083	—	—	45	.1770	4.498	—	—	16
.0179	0.455	25	—	—	.0850	2.159	—	44	—	.1780	4.523	—	15	—
.0180	0.457	—	76	77	.0860	2.184	—	—	44	.1800	4.570	—	14	15
.0200	0.508	—	75	76	.0880	2.235	—	43	—	.1819	4.618	5	—	—
.0201	0.511	24	—	—	.0890	2.261	—	—	43	.1820	4.621	—	13	14
.0210	0.533	—	—	75	.0907	2.304	11	—	—	.1850	4.697	—	12	13
.0220	0.559	—	74	—	.0920	2.337	—	42	—	.1880	4.773	—	11	—
.0225	0.572	—	—	74	.0935	2.378	—	—	42	.1890	4.799	—	—	12
.0226	0.574	23	—	—	.0950	2.413	—	41	—	.1910	4.855	—	10	11
.0230	0.584	—	73	—	.0960	2.438	—	—	41	.1935	4.919	—	—	10
.0240	0.610	—	72	73	.0970	2.464	—	40	—	.1940	4.932	—	9	—
.0250	0.635	—	—	72	.0980	2.489	—	—	40	.1960	4.982	—	—	9
.0253	0.643	22	—	—	.0990	2.515	—	39	—	.1970	5.008	—	8	—
.0260	0.660	—	71	71	.0995	2.528	—	—	39	.1990	5.059	—	7	8
.0270	0.685	—	70	—	.1010	2.565	—	38	—	.2010	5.105	—	6	7
.0280	0.712	—	—	70	.1015	2.578	—	—	38	.2040	5.182	—	5	6
.0285	0.724	21	—	—	.1019	2.588	10	—	—	.2043	5.189	4	—	—
.0290	0.737	—	69	—	.1030	2.616	—	37	—	.2055	5.220	—	—	5
.02925	0.743	—	—	69	.1040	2.642	—	—	37	.2070	5.258	—	4	—
.0300	0.762	—	68	—	.1060	2.692	—	36	—	.2090	5.309	—	—	4
.0310	0.787	—	67	68	.1065	2.705	—	—	36	.2120	5.381	—	3	—
.0320	0.813	20	66	67	.1080	2.743	—	35	—	.2130	5.406	—	—	3
.0330	0.838	—	65	66	.1100	2.794	—	34	35	.2190	5.559	—	2	—
.0350	0.889	—	64	65	.1110	2.819	—	—	34	.2210	5.615	—	—	2
.0359	0.912	19	—	—	.1120	2.845	—	33	—	.2270	5.768	—	1	—
.0360	0.914	—	63	64	.1130	2.870	—	—	33	.2280	5.793	—	—	1
.0370	0.940	—	62	63	.1144	2.906	9	—	—	.2294	5.829	3	—	—
.0380	0.965	—	61	62	.1150	2.921	—	32	—	.2576	6.543	2	—	—
.0390	0.990	—	60	61	.1160	2.946	—	—	32	.2893	7.346	1	—	—
.0400	1.016	—	59	60										

RING SIZES TO INCHES

SIZE	INCH DIA.	SIZE	INCH DIA.	SIZE	INCH DIA.	SIZE	INCH DIA.
0	.458	3	.554	7	.682	10 1/2	.794
1/4	.466	3 1/2	.570	7 1/2	.698	11	.810
1/2	.474	4	.586	8	.714	11 1/2	.826
3/4	.482	4 1/2	.602	8 1/2	.730	12	.842
1	.490	5	.618	9	.746	12 1/2	.858
1 1/2	.506	5 1/2	.634	9 1/2	.762	13	.874
2	.522	6	.650	10	.778	13 1/2	.890
2 1/2	.538	6 1/2	.666				

FRACTIONAL AND DECIMAL INCHES TO MILLIMETERS

FRACTIONS	INCHES	MM	FRACTIONS	INCHES	MM	FRACTIONS	INCHES	MM
1/64	.0156	0.3969	17/64	.2656	6.7468	49/64	.7656	19.4467
1/32	.0313	0.7937	9/32	.2812	7.1437	25/32	.7813	19.8436
3/64	.0469	1.1906	19/64	.2969	7.5405	51/64	.7969	20.2404
1/16	.0625	1.5875	5/16	.3125	7.9374	13/16	.8125	20.6373
3/64	.0781	1.9843	21/64	.3281	8.3343	53/64	.8281	21.0342
3/32	.0937	2.3812	11/32	.3438	8.7312	27/32	.8436	21.4311
7/64	.1094	2.7781	23/64	.3594	9.1280	55/64	.8594	21.8279
1/8	.1250	3.1750	3/8	.3750	9.5249	7/8	.8750	22.2248
9/64	.1406	3.5718	25/64	.3906	9.9217	29/32	.9063	23.0185
5/32	.1562	3.9687	13/32	.4062	10.3186	59/64	.9219	23.4154
11/64	.1719	4.3656	27/64	.4219	10.7155	15/16	.9375	23.8123
3/16	.1875	4.7624	7/16	.4375	11.1124	61/64	.9531	24.2091
13/64	.2031	5.1593	29/64	.4531	11.5092	31/32	.9686	24.6060
7/32	.2187	5.5562	15/32	.4687	11.9061	63/64	.9844	25.0029
15/64	.2344	5.9530	31/64	.4844	12.3030	1	1.0000	25.3998
1/4	.2500	6.3499	1/2	.5000	12.6999			

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